

THE MINING CONGRESS JOURNAL

SEPTEMBER, 1917

VOL. III

No. 9

SAFETY-EFFICIENCY-CONSERVATION



DR. HARRY A. GARFIELD
The New Fuel Administrator

PUBLISHED BY
THE AMERICAN MINING CONGRESS
PUBLICATION OFFICE
MUNSEY BUILDING WASHINGTON, D. C.

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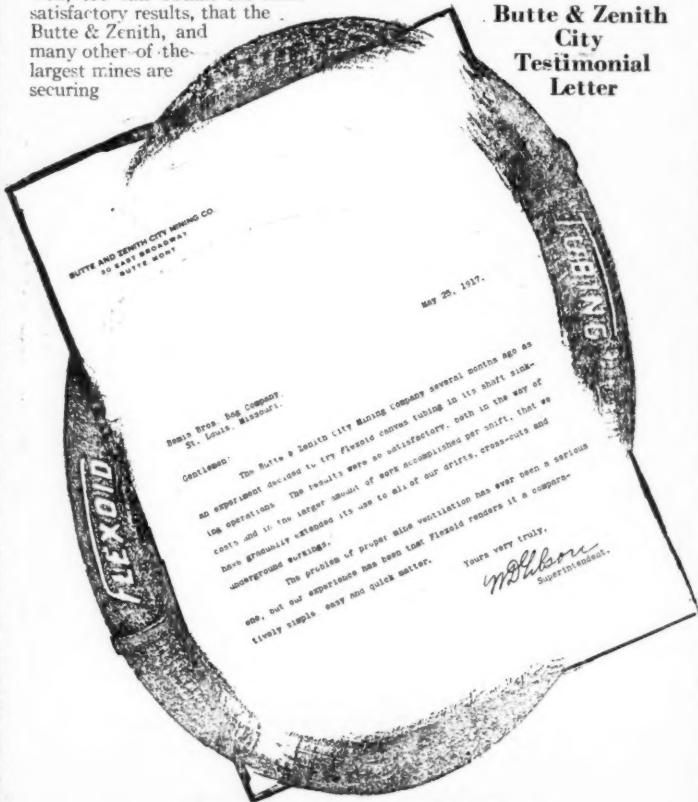
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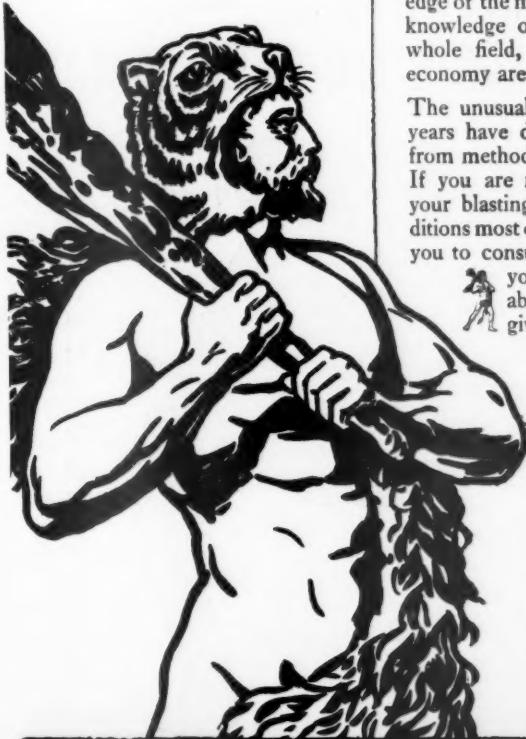
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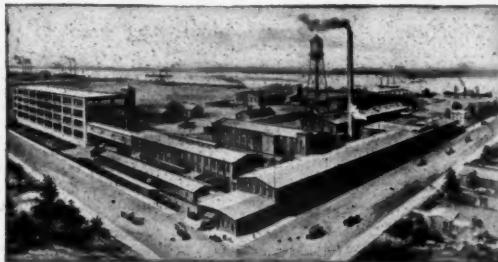
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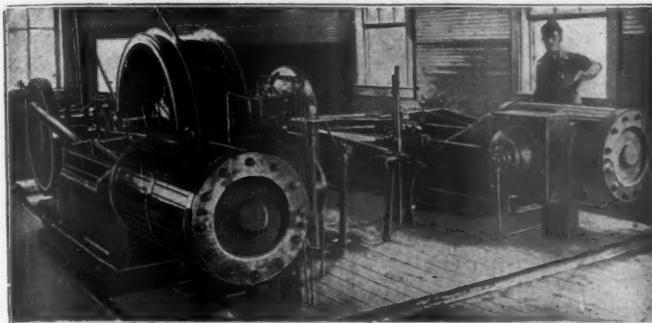
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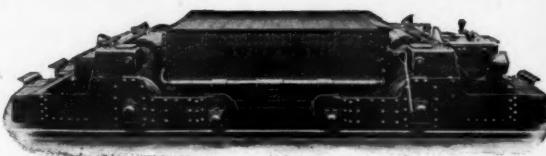
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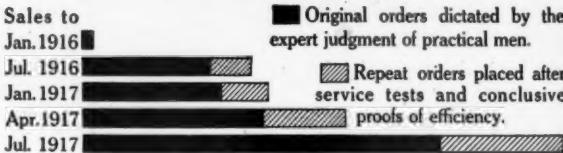
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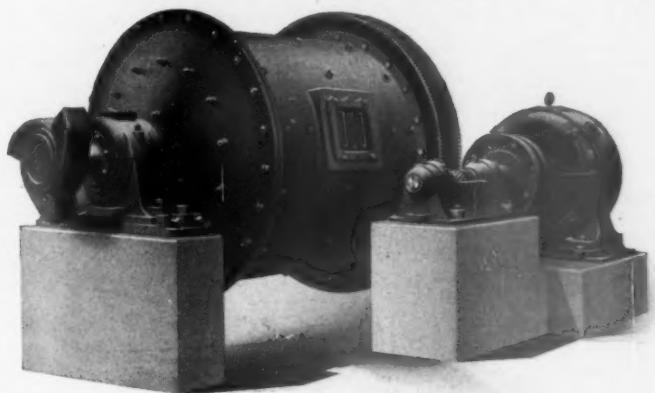
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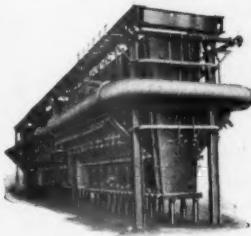


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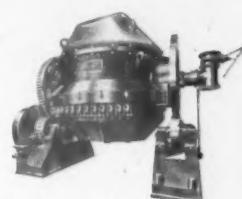
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THE MINING CONGRESS JOURNAL

Official Organ of the American Mining Congress

AN EXAMPLE AND AN APPEAL

At every annual convention of the American Mining Congress held for several years past the enthusiasm of the convention has led various members to offer their services in building up the organization by adding to its membership. Most of this enthusiasm has not culminated. Membership committees have failed in their function.

A new campaign is under way. A new era has been begun by the very effective work of Dr. Henry Mace Payne, who, having a few weeks' time between professional engagements, devoted it to the Mining Congress work, adding through his personal effort more than one hundred active members and eight life members to the Mining Congress membership roll.

Why should not each member of the Mining Congress take the same interest? Will you, brother member, undertake to get one member during the next month, in order that in our next month's issue we may publish a list of new members, bringing an equally powerful addition to the influence of the Mining Congress? Let each member get a member. Elsewhere in this issue will be found an application blank. Will you, brother member, follow the good example?

A DEPARTMENT OF MINES AND MINING

The need of a department of mines and mining, with its head a member of the President's Cabinet, has never been more forcibly illustrated than in the present situation and during the present

crisis. The Bureau of Mines has done splendid work, but the influence of the mining industry in the nation's councils has of necessity been presented to the Executive through agencies with only a long-distance acquaintance with the industry.

The importance of mining to the nation's welfare is not recognized. The treatment of the industry by the National Government is not and never has been fair. The mining industry has been the goat upon which the sins of all other industries have been loaded.

It is hoped that the nation will learn its lesson without the intense punishment which seems to be necessary to educate the public in a new line of thought. Mining is the most important business of the nation. It should be first at the council table of the national administration.

When will the nation awaken to the great importance of the creation of a department of mines and mining whose head shall be a member of the President's Cabinet?

DRY NOW; EAT NEXT WINTER

A clever and extremely serviceable bit of advertising is being sent out by the American Steel and Wire Company as a weekly report on crop conditions. In addition to a comprehensive crop report, other features of special interest are included. Its report for the week ending August 11, 1917, in addition to urging its readers to send to the Agricultural Department, Washington, D. C., for Farmers' Bulletin No. 841, giving

directions for the drying of fruits and vegetables, it also gives a sketch and directions for converting a hotbed sash and a box into a very satisfactory dryer. It may seem a long call from steel wire to dried potatoes, but the American Steel and Wire Company is far-sighted enough to understand that its prosperity depends upon the general prosperity of the country, which in turn depends upon a sufficiency of food, and that the preservation of fruits and vegetables which might otherwise be wasted is of vital importance to steel manufacturers.

INDUSTRIAL SLAVERY

A large part of the cost of all strikes must in the end be paid by the consumer. When strikes are primarily for the purpose of forcing unwilling employers to pay proper wages or for the purpose of enforcing conditions in which a willing employer will be able to allow the demand of the wage-earner, the consumer should be willing to shoulder a part of the expense for the general good. But when the sole or the most important issue is the recognition of the union, it is extremely unfair that the consumer shall be required to assume the burden. At this time strikes are unusually prevalent. In many instances the chief issue is the recognition of the union, which, as a rule, means the right to say that no man who is not a member of the union shall be permitted to work. In many instances the demand is for the complete recognition of the union, the adoption of the check-off (*i. e.*, the collection by the employers of all dues and assessments levied upon the workmen by the union), and the closed shop.

These demands mean that no man shall be permitted to earn a living for himself and his family except upon condition that he shall be a member of the union. *THE MINING CONGRESS JOURNAL believes that the independence of the American workmen is more important than any other issue which can arise in any industrial controversy. It believes that the right "to work and receive wages" is inherent to every man, whether he is a member of the union or not. It*

believes that the requirement that any man shall or shall not be a member of any organization in order that he may perform his duty as a citizen is subversive of his liberty and constitutes a dangerous form of industrial slavery.

Few strikes have ever been won where public sympathy has been against the strikers, and few strikes have been lost where the cause of the strikers has been endorsed by public sentiment. This is as it should be, and it is therefore important that the public shall fully understand the issues involved, because the human side of these controversies must not be lost to sight. The consumer has an interest, the general public has an interest which must be taken into account, and in the end such settlement made as will make for the greatest public good and for the most complete industrial liberty of all toilers in the ranks of America's industrial life.

CLOSING OF SMALL MINES

It is freely admitted by those in administration circles who have had to do with the fixing of coal prices that the price fixed will undoubtedly close a considerable number of small mines, but the hope is expressed that the men employed in these mines can find employment in the larger mines, where facilities of production are such as to make their work more effective, and that the railroad companies can furnish cars more easily to a few large mines than to a larger number of large and small mines combined.

To meet the present stress, all the mines, both large and small, should be operated to their fullest capacity. The closing of the small mines in any considerable number is the wiping out of that margin of production which marks the difference between a sufficiency of coal and a coal famine. The destruction of the business of the small operator is a standing menace to future conditions after the present exigency has passed. There are those who believe that the law of supply and demand, now temporarily set aside as to coal, will become permanent because of that fact that cheap coal

will be furnished to a public which had grown to believe that coal at very high prices was inevitable. Let us hope that this may be the beneficent result. It is not, however, a long stretch of the imagination to anticipate a shortage of coal so intense that the question of price will be most unimportant and that the great question will be to get coal at any price and under any condition.

It is inconceivable that a dozen men with no previous knowledge of the coal business can succeed in a plan which the mature judgment of thousands of men with a life-long training in the coal business and actuated by the highest patriotic motives agree to be impossible. Unless THE MINING CONGRESS JOURNAL is much mistaken, the old adage, "Providence tempers the wind to the shorn lamb," will have ample opportunity for again demonstrating its truth before the coming winter is over.

THE PUBLIC LANDS QUESTION

For many years the American Mining Congress has been protesting against the proposal of establishing a Federal leasing system as the sole method under which the mineral lands and water powers of the United States could be operated. It has insisted in season and out of season that such a system was wrong; that it would prevent development; that it would keep from the taxing power of the newer states most valuable property, and that it would foster monopoly in the hands of those who are already in control of property acquired under the public land system. The Mining Congress has particularly protested against the kind of administration which deprived individuals of rights acquired in accordance with the construction placed upon the mining laws and who had invested large sums in the development of mining and water power properties, as nearly as possible in accordance with the departmental construction of the public land laws.

The result of this general protest against a Federal leasing of mineral lands has been to transform the radical and restrictive leasing measures first

proposed to a leasing bill fairly liberal in its provisions and providing that these conditions shall operate side by side with the present land system, under which patents may be granted under proper conditions to those who require a stable title as a basis for investment. On another page will be found a synopsis of the compromise bill, approved by practically all western interests, and which seems likely to be enacted by Congress during the current year. THE MINING CONGRESS JOURNAL congratulates the West and those who have fought in this contest upon the fact that out of all the agitation a bill has been developed which is fairly satisfactory to all interests.

WESTERN MINE DEVELOPMENT

THE MINING CONGRESS JOURNAL has repeatedly urged the great need of exploitation companies for the purpose of developing prospects, and has pointed out the importance of having other metal mines available for the utilization of capital, brains and energy now employed in these mines which sooner or later will be exhausted. It has pointed out the importance of contemporaneous development of a large number of prospects in order that such an average may be secured as will insure that some among the whole will be developed into paying properties, thus recompensing the loss which unsuccessful development of other prospects entail.

The manufacture of mines (the development of prospects), offers a field giving promise of large profits to capital and also bringing benefit to the communities in which the development work is done. The West offers numberless opportunities for such investments. The larger mine development companies have been most successful in enterprises of this kind.

It may be urged that these have taken the cream of offerings and that what remains may not justify investment. If this were true these companies would not still be on the hunt for other opportunities. It is also true that because these companies have rejected an offering is not proof that it does not possess

merit, but only that at the price offered it did not appeal at that time.

Such a prospect might be most desirable for a smaller company, or at a time when the demand is greater for its product. One great drawback to eastern investment in western mines is the fact that many promoters have taken advantage of the fact that investors could not make proper investigation of the conditions surrounding an offering except at a greater expense than a small investment would justify.

The Utah Chapter of the American Mining Congress has developed a plan which was presented in the August issue of the MINING CONGRESS JOURNAL to meet this situation. It is hoped that other State Chapters will take up this work and that through the National Organization a complete clearing house may be developed. The Mining Congress will gladly render any possible service in this direction.

To quote the Engineering and Mining Journal: "Not only is the field of opportunity not barren, but there is a marked need of an exploitation company for the handling of comparatively small properties."

THE PRICE OF COAL

The fixing of a maximum price upon coal and a minimum price upon wheat emphasizes the distinction in the public mind between mining and farming.

For years dollar wheat was the ambition of the wheat-raising farmer. During these years, when wages and operating costs were much lower than now, the cost of the labor and supplies involved in the production of coal was considerably in excess of \$1 per ton. The cost of coal production has increased very much more in proportion than the cost of raising wheat.

Coal is an absolute necessity in our industrial life. Wheat is very important, but not a necessity. There are plenty of substitutes for wheat, but absolutely no substitute for coal. Yet a minimum price of \$2 per bushel is fixed for wheat and a maximum price of \$2 a ton is fixed for coal, with slight variations governed by locality.

It is true that the public should be supplied with coal at the lowest cost possible, granting a proper wage to the miner and a fair profit to the producer. But THE MINING CONGRESS JOURNAL contends that the price fixed by the administration does not leave a fair profit to the producer after paying fair wages and providing the necessary overhead charges for depreciation of mining plants and for the exhaustion of mining property except in the very large mines. These mines will produce approximately five hundred million tons of coal if transportation facilities are provided. This will leave the country fifty million tons short of the necessary amount which must be produced at a loss if a coal famine is to be averted.

The writer has not and never did have any personal interest in coal production, and his only interest in the price is that of the buyer. The writer has a considerable interest in the price of wheat as a producer, and every personal interest would approve the minimum price upon wheat and the maximum price upon coal, but an interest broader than the personal interest forces the conclusion that the action of the administration in this matter is dangerously wrong. What the country needs today is to stimulate the highest possible production. The hope of profit is the only incentive which has ever induced business enterprises, as a whole, to speed up production. Patriotic motives will undoubtedly stimulate a large percentage of coal operators to produce the highest amount possible, even though the profits are practically eliminated by the price fixed by the Government; but can anyone be foolish enough to suppose that new mines are to be opened, that increased development is to be carried on, that new machinery of production is to be created in order to supply a temporary need for fuel, when it is almost certain that the machinery thus created will be useless as soon as the present emergency is passed? Will the 50,000,000 tons of coal in addition to ordinary production which this country will absolutely require to prevent a coal famine be provided by these conditions?

Will our railroads be forced to commandeer coal which is offered for shipment over their lines in order that they may operate trains to carry the minimum-priced wheat to the central markets? Will the poor of our great cities, unable to buy this wheat because the manufacturing plants which furnish employment are closed for lack of coal, commend the monumental foolishness of those who cut off the supply at its source? Truly we are embarking upon a sea of uncertainty. A coal famine under any circumstance would be a great calamity, but a coal famine brought about by the idiotic belief that one man without business training in any big business undertaking can know more about the management of a huge enterprise than five thousand men whose lives have been devoted to a practical study of its problems would be a national humiliation.

(Note: Since dictating the above a letter came to this office, from which we quote: "The purpose of this company was to develop on a pretty large scale, but on account of the agitation against the coal business and the probable Government interference, we have decided to await the passing of the storm of indiscretion now so seriously threatening the coal business.")

A GROWING MINING ORGANIZATION

With the election of Mr. George H. Crosby, of Duluth, as a director and vice-president of the American Mining Congress, intensified interest in the problems of the iron ore industry became assured. In the recent campaign for the organization of an iron chapter of the Congress practically all of the large corporations and independent operators in the Duluth district took memberships in the Congress for themselves and their various subsidiaries. The ore-carrying transportation companies, in similar manner, have recognized the fact that the American Mining Congress today is the strongest visible link between the operator-producer and the Government, and are participating in the deliberations of the Congress in earnest anticipation that a solution may be found for many of the present problems in that district.

In years past gold and silver, lead and zinc, copper and coal have occupied prominent places in the programs of the Congress' sessions, and there is no reason why, with the enormously strong representation which the iron and steel industry now have in the Congress, the new Iron Chapter should not become a potent factor in the affairs of the Congress and at the same time receive much benefit from the sympathetic cooperation of the other branches of the mining industry.

Until recently the oil industry has felt that its problems were specifically exclusive, but at the last session of the American Mining Congress, in Chicago, about 25 per cent of the papers discussed were related to petroleum and its problems. This situation and its past achievements induced the leading operators of California to volunteer their support for an oil chapter of the Congress, and the memberships recently acquired in California are the nucleus of what promises to be another strong adjunct in our national work.

The anthracite coal mining companies of Pennsylvania, in similar manner, have joined their bituminous brethren in a concentrated endeavor to improve coal mining conditions generally; and to summarize, it might be said that at the present time, as never before, all branches of the mining industry are cooperating heartily through the Congress toward securing the fullest measure of relief from various oppressive conditions and toward assisting the Government in the fullest measure possible in all proper and practical lines.

THE OIL SITUATION

One of the great national problems which will present itself in a forcible way in the not distant future is the production of petroleum. The use of gasoline as a motive power is increasing with great rapidity. Actual war progress at the front cannot go on with perfect effect without the use of very large quantities of gasoline.

In order that the present demand shall

be met there must be a continually increasing number of producing wells developed. To supply the increased demand occasioned by the war situation will call for a largely increased development of oil wells. The Requa-Haseltine-McQuigg report in California shows that the average well the fourth year only produces one-half as much as the first year; that the average life of a well does not exceed thirty years, and that after the tenth year the production is comparatively negligible. According to the report of the committee on petroleum of the California State Council of Defense, the production in that state for 1916 amounted to 13,200,000 barrels more than was consumed; during the first five months of 1917 the consumption exceeded the production 5,415,000 barrels, or approximately 35,860 barrels per day. When we add to this the additional demand for military use, it will be readily seen that some effort must be made to stimulate the development of oil wells if the present consumption is to be continued and the war demand met.

It is true that a large saving of gasoline can be effected by greater economy on the part of automobile users, but even this would not ordinarily be sufficient to meet the increased demand for industrial and military purposes. It is estimated that to meet the present shortage and to make up the shrinkage in production of the present wells in California would require the bringing in of 800 additional wells, and no one yet has been able to predict how many additional wells would be required to meet the increased demand for military purposes.

In other words, in the state of California alone there should be drilled during the present year from one thousand to two thousand producing oil wells. The average cost of drilling a well during the past in the shallow field, say, 1,000 feet, has been approximately \$7,500. One thousand wells at the old-time prices would cost approximately \$7,500,000. Including the cost of dry wells to bring in 1,000 producing wells at present prices would require an ex-

pense during the year of approximately \$15,000,000.

This, then, is the absolute necessity if the nation's demand for petroleum products is to be met. At the present time contracts cannot be made for oil well casing for delivery within eighteen months, nor at prices less than 100 to 300 per cent advance upon the regular prices. The failure to include oil well casing as a war material has made utterly impossible the development of the oil wells which are essential to meet our national necessity. The situation in California is more or less typical of the nation's condition. The Council of National Defense may well give grave consideration to the serious problems involved in the future of the petroleum industry.

WORSE THAN A DESERTER

The necessity for increased production in all lines makes particularly dangerous the increasing number of labor strikes in various parts of the country. The great world war for democracy cannot be won except food, fuel and war munitions are produced in largely increased quantities. To accomplish this in normal times would require a speeding up of industrial processes; to accomplish it during present conditions will require that every productive agency shall work under pressure all of the time. The great business of the country is to win the war. All patriotic citizens are willing to set aside their rights of personal liberty so far as necessary to enable the Government to most effectively meet its necessities. This duty rests in an equal way upon all citizens. It does not require the wage-earner to continue to work at old-time wages when the necessities of life have so increased in cost that even with the greatest of economy and prudence he is unable to properly support his family. Unless some other method is available by which this inequality can be righted, the strike is justifiable. Organized labor should endeavor to provide a different method.

The nation requires continuous service. The workman needs continuous employment. The employers' profits de-

pend upon continuous operation. Every interest involved can be best served by an orderly settlement of the dispute. All other disputes are settled by arbitration or judicial determination. Why not labor disputes? Is it because the direct parties to such disputes feel able to gain by force more than can be hoped for through a fair arbitration? This motive, if it exists, should not be tolerated for a moment at any time, and particularly at the present time, when the lives of our soldiers in the trenches and the success of our nation in its fight for world democracy depends upon the food and supplies which will not be available except each loyal citizen shall perform his best service and his full duty. The public interest should now be accepted as supreme, and at this time the man who chooses to strike for increased wages when any other method is available by which he can secure redress is entitled to the same public approbation as the deserter from military service. This only upon the theory that some other method of redress is available. If no such remedy exists, then it is the duty of the Government to provide such remedy, and he who opposes such legislation is worse than the deserter.

ABOUT THE COAL TRADE

A recent contribution to the *Washington Post* by Ryley Grannon, under the title of "War Costs a Menace," says that the strong men in the Government "have discovered that the coal producers 'put one over' when they agreed to sell for \$3 a ton, and the copper producers also 'put one over' when they agreed to \$16.50 a ton. In each case the profits are more than 100 per cent."

This statement is not only false, but its publication has a tendency to create conditions which will leave our armies at the front defenseless and our people at home in want. Coal and copper are two of the prime necessities of the war. Copper even is worthless without coal.

The country will need at least 50,000,000 tons of coal more than has ever been produced, and a failure to produce this additional amount will be disas-

trous. Labor is scarce and becoming scarcer; transportation facilities will not be adequate to meet the increased demand for service, when winter arrives, unless all facilities for the storage of coal at points remote from the mines are utilized during the summer months. Dealers cannot be expected to buy and store coal when a lower price is promised for the future.

Transportation companies must be urged by every possible reason to distribute as rapidly as possible to the centers of consumption. Coal producers of the country must be urged by every possible reason to stimulate the highest possible production.

For six years prior to the beginning of the war bituminous operators had been selling their coal at an average loss of 10 cents per ton on the total production in the country. During these years hundreds of coal producing companies had gone into bankruptcy. In Pittsburgh, the great coal producing center, three of the largest companies were in receivers' hands. The bituminous coal trade was on the verge of bankruptcy and collapse. Most producers were tied up with long-time contracts at low prices which could not be and were not broken. The small amount of free coal (coal not under contract) was entirely inadequate to meet the increased demand, and buyers were clamoring for the privilege to buy this small percentage of remaining free coal at enormously high prices.

This was the condition when the Coal Committee of the Council of National Defense invited the coal operators to convene in Washington, at which time they agreed to accept less than half the market price for such coal as was available for delivery, and this notwithstanding the fact that this was the first opportunity to meet the deficit which had been created by six years of business loss.

With this statement of fact, instead of criticising the coal operators for their course, instead of accusing them of sharp practice and of taking advantage of the nation's necessities, they should be given credit for almost superhuman good intention, denying themselves the

right to reimburse themselves for the benefit of people who had taken the advantage of their losses during the years referred to, and agreeing to a maximum price of \$3 per ton for domestic consumption and \$2.50 per ton to the Government.

What the country needs is an immediate increase of coal production and distribution. It needs that more than any other one thing, and in the face of largely increased cost of supplies, a shortage of labor, a lack of proper transportation facilities, surely the coal operator must not in addition to these handicaps be burdened with an unjust and ungrateful public criticism.

Dealers and large users must lay in adequate supplies. Domestic consumers must be stimulated to provide for probable needs, and this must be done now to insure against want during the coming winter. Abnormal production and abnormal distribution must begin at once. There need not be a coal famine if the orderly conduct of production and distribution is not interfered with.

LIKE RED PEPPERS

"Take the Sherman anti-trust law and hang it up on the back porch like a string of red peppers, and let it hang there until the war is over." This is the expression of a prominent manufacturer when his opinion on the subject was asked recently by a high Government official.

SON OF FORMER PRESIDENT MADE COAL ADMINISTRATOR

Dr. Harry A. Garfield, the new coal administrator whose cut appears on the outside cover of this issue, was born in Hiram, Ohio, October 11, 1863. He is the son of James A. Garfield, one of the martyred presidents of the United States. He is an alumnus of Williams College of which he is now the president. He is nationally known as an educator and a lawyer. His class in politics at Princeton University was one of the most popular classes in that institution. Dr. Garfield was the organizer of the Lake Erie Alliance and Wheeling Coal Company which developed a large acreage of virgin coal land in the No. 8 district of Ohio. The property is now conducted by the Jefferson Coal Company, which is operated by the New York Central.

IRON REGION TO HAVE EXPERIMENT STATION

Minneapolis to Be Site of New Bureau of Mines Station—To Study Treatment of Low-Grade Ores

Secretary of the Interior Lane has authorized the establishment of a mining experiment station at Minneapolis, Minn., under the jurisdiction of the Bureau of Mines, the station to represent the iron mining districts.

Director Van H. Manning, of the Bureau of Mines, in making his recommendation that such a station be established at Minneapolis, said: "The bureau should as soon as possible give attention to the treatment and concentration of low-grade iron ores, with the purpose of increasing the iron ore reserves of this country by making available those low-grade ores which at present cannot be economically smelted."

"Vast as are the ore reserves of Minnesota, at the present rate of production the high-grade ores now developed will be almost exhausted within thirty years. However, there are huge deposits of lower-grade ores not now utilized, and these will become of great value if their treatment can be made profitable. Some important problems that must be solved if the high standards of the mining industry are to be maintained are:

"The concentration of the hematite ores, carrying from 35 to 50 per cent iron, which are now practically worthless.

"The concentration of great quantities of magnetite ores, particularly those on the east end of the Mesaba Range.

"The utilization of titaniferous ores that occur in considerable abundance in northeast Minnesota. Owing to metallurgical difficulties, these ores are not now utilized.

"The concentration of the low-grade manganese ores of the Cuyuna Range. If these ores could be concentrated and their phosphorus content decreased, they would be very valuable, whereas they are not now utilized to any great extent."

The new station will work in cooperation with the School of Mines of the University of Minnesota, which is located at Minneapolis.

LABOR SHORTAGE AND STRIKES HAMPER PRODUCTION OF COAL

The decline in output of coal is chiefly to be attributed to a relative increase in labor shortage and strikes. In Illinois this factor, limiting production, rose from a normal level of 4 per cent to more than 16 per cent of the full-time output. In Kansas also scattering strikes continued to limit production. The dull market in Iowa was obscured during the week ended August 11 by a sharp increase in car shortage and losses due to labor.—*From the Geological Survey's Weekly Coal Report.*

COAL PRICES FIXED BY EXECUTIVE DECREE

President Wilson Cuts Prices One-third Below That Fixed Voluntarily by the Operators

Without question, the past month has been one of the most notable in the history of the coal mining industry. The President of the United States has fixed the prices of bituminous and anthracite coal and has specified the margin which jobbers may allow for their profit. He has named a coal dictator, who is clothed with ample powers to control prices of coal so as to insure its reaching the consumer without more than reasonable margins being collected by retailers.

From the time that the legislation authorizing the President to fix prices and control fuels became a law, there has been great uncertainty as to what steps would be taken. Prior to the President's order it had been anticipated that the matter of price fixing would be left until after the appointment of the coal administrator, so that that official could pass upon the conclusions reached by the Federal Trade Commission as to costs. There was great surprise consequently when the President himself announced the prices which are about to follow. At first it was thought the President intended to place a board composed of three men at the head of the fuel administration. It had been suggested to the President by very influential persons that a board consisting of Francis S. Peabody, chairman of the committee on coal production; William B. Colver, of the Federal Trade Commission, and John P. White, president of the United Mine Workers of America, be named. It is said that this plan received the careful consideration of the President. From the first, however, he leaned toward a one-man administration, such as had been provided for the control of foods.

When it became fairly well understood that the President was to appoint an individual to head the fuel administration there was much speculation, with considerable display of nervousness, as to who it would be. It can be said with all truthfulness that great relief was felt among coal operators present in Washington when it was learned that Dr. H. A. Garfield had been selected for the place.

President Wilson's official statement as given out at the White House is as follows:

"The following regulations shall apply to the intrastate, interstate and foreign commerce of the United States, and the prices and margins referred to herein shall be in force pending further investigation or determination thereof by the President."

JOBBERS MARGINS

1. A coal jobber is defined as a person (or other agency) who purchases and resells coal

to coal dealers or to consumers without physically handling it on, over, or through his own vehicle, dock, trestle, or yard.

2. For the buying and selling of bituminous coal a jobber shall not add to his purchase price a gross margin in excess of 5 cents per ton of 2,000 pounds; nor shall the combined gross margins of any number of jobbers who buy and sell a given shipment or shipments of bituminous coal exceed 15 cents per ton of 2,000 pounds.

3. For buying and selling anthracite coal a jobber shall not add to his purchase price a gross margin in excess of 20 cents per ton of 2,240 pounds when delivery of such coal is to be effected at or east of Buffalo. For buying and selling anthracite coal for delivery west of Buffalo, a jobber shall not add to his purchase price a gross margin in excess of 30 cents per ton of 2,240 pounds. The combined gross margins of any number of jobbers who buy and sell a given shipment or shipments of anthracite coal for delivery at or east of Buffalo shall not exceed 20 cents per ton of 2,240 pounds; nor shall such combined margins exceed 30 cents per ton of 2,240 pounds for the delivery of anthracite coal west of Buffalo. Provided, that a jobbers' gross margin realized on a given shipment or shipments of anthracite coal may be increased by not more than 5 cents per ton of 2,240 pounds when the jobber incurs the expense of rescreening it at Atlantic or Lake ports for trans-shipment by water.

ANTHRACITE PRICES

4. Effective September 1, 1917, the maximum prices per ton of 2,240 pounds free on board cars at the mines for the grades and sizes of anthracite coal hereinafter specified shall not exceed the prices indicated in paragraph 5 when such coal is produced and sold by the Philadelphia & Reading Coal and Iron Co., Lehigh Coal and Navigation Co., Lehigh and Wilkes-Barre Coal Co., Hudson Coal Co., Delaware and Hudson Co., Scranton Coal Co., Lehigh Valley Coal Co., Cox Bros. & Co., Pennsylvania Coal Co., Hillside Coal and Iron Co., Delaware, Lackawanna & Western Railroad Co., Delaware, Lackawanna & Western Coal Co., Susquehanna Coal Co., Susquehanna Collieries Co., Lytle Coal Co., or the M. A. Hanna Coal Co.

5. The grades and sizes for which the maximum prices are specified are as follows. White Ash anthracite coal of the grades that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the coal trade as coal of White Ash Grade; Red Ash anthracite coal of the grade that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the trade as coal of Red Ash grade, and Lykens Valley anthracite coal that is mined exclusively from the Lykens Valley seams and of the grade that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the coal trade as coal of Lykens Valley grade.

White Ash Grade	Red Ash Grade	Lykens Valley Grade	Virginia.....	2.00	2.25	1.75
Broken . . .	\$4.55	\$4.75	Ohio (thick vein) . . .	2.00	2.25	1.75
Egg . . .	4.45	4.65	Ohio (thin vein) . . .	2.35	2.60	2.10
Stove . . .	4.70	4.90	Kentucky	1.95	2.20	1.70
Chestnut . . .	4.80	4.90	Kentucky (Jellico) . . .	2.40	2.65	2.15
Pea . . .	4.00	4.10	Alabama (big seam),	1.90	2.15	1.65
			Jaeger and Corona) . . .	2.15	2.40	1.90
			Alabama (Cahaba and Black Creek) . . .	2.40	2.65	2.15
			Tennessee (eastern) . . .	2.30	2.55	2.05
			Tennessee (Jellico) . . .	2.40	2.65	2.15
			Indiana	1.95	2.20	1.70
			Illinois	1.95	2.20	1.70
			Illinois (third vein) . . .	2.40	2.65	2.15
			Arkansas	2.65	2.90	2.40
			Iowa	2.70	2.95	2.45
			Kansas	2.55	2.80	2.30
			Missouri	2.70	2.95	2.45
			Oklahoma	3.05	3.30	2.80
			Texas	2.65	2.90	2.40
			Colorado	2.45	2.70	2.20
			Montana	2.70	2.95	2.45
			New Mexico	2.40	2.65	2.15
			Wyoming	2.50	2.75	2.25
			Utah	2.60	2.85	2.35
			Washington	3.25	3.50	3.00

6. Producers of anthracite coal who are not specified in paragraph 4 shall not sell the various grades and sizes of anthracite coal at prices that exceed by more than 75 cents per ton of 2,240 pounds free on board cars at the mines the prices enumerated in paragraph 5. Provided, that any producer of anthracite coal who incurs the expense of rescreening it at Atlantic or Lake ports for trans-shipment by water may increase the price thereof by not more than 5 cents per ton of 2,240 pounds.

7. Producers of anthracite coal specified in paragraph four of these regulations shall not sell anthracite coal to producers of anthracite coal not specified in paragraph four.

8. Dealers and selling agents shall not sell coal produced by the producers included in paragraph four on the basis of the prices fixed at the mine for coal produced by producers not specified in said paragraph.

Woodrow Wilson.

The White House,
August 23, 1917.

The price-fixing statement, as prepared at the White House and signed by the President, is as follows:

"The following scale of prices is prescribed for bituminous coal at the mine in the several coal producing districts. It is provisional only. It is subject to reconsideration when the whole method of administering the fuel supplies of the country shall have been satisfactorily organized and put into operation. Subsequent measures will have as their object a fair and equitable control of the distribution of the supply and of the prices not only at the mines but also in the hands of the middlemen and the retailers.

"The prices provisionally fixed here are fixed by my authority under the provisions of the recent Act of Congress regarding administration of the food supply of the country, which also conferred upon the Executive control of the fuel supply. They are based upon the actual cost of production and are deemed to be not only fair and just, but liberal as well. Under them the industry should nowhere lack stimulation."

Note:—Prices are on f. o. b. mine basis for tons of 2,000 pounds.

	Run of mine	Prepared sizes	Slack or screenings
Pennsylvania.....	2.00	2.25	1.75
Maryland.....	2.00	2.25	1.75
West Virginia.....	2.00	2.25	1.75
West Virginia (New River).....	2.15	2.40	1.90

Dr. Harry A. Garfield, who has taken up his duties as coal controller, has announced that three cardinal principles will be observed. They are:

1. Fair treatment of operators under conditions which would stimulate production.

2. Fair treatment of the jobbers, with restrictions which would prevent this branch of the trade taking advantage of the retailer.

3. Fair treatment of the retailer, with restrictions, which would prevent exorbitant profits.

"We will try," Dr. Garfield said, "to obtain coal for the consuming public without working undue hardship to any department of the trade, and we believe that much can be accomplished in this direction. Just what reductions are possible is a matter of conjecture; we must first get our organization into operation.

"It is possible that a system of licensing will be adopted in order to obtain complete control of the situation in the interests of all, and this may be done largely on the plan worked out for the control of the wheat supply. In this way we could compel the jobbers to accept the ruling of the President as to the profits they shall make, as the license could be rescinded if conditions were not met."

The problem of controlling the retailer, Dr. Garfield admitted, is complicated, because of the many companies and individuals involved, but it can be stated that if necessary to prevent abuses a licensing system will be inaugurated also for that branch of the industry.

F. G. Cottrell, chief mining engineer of the Bureau of Mines, has left Washington for a two months' field trip. He will make the rounds of the mining experiment stations before returning to Washington.

PRIORITY ORDER COVERS COAL FOR NORTHWEST

To Meet Critical Situation, President Makes First Use of New Power Granted Ten Days Before.

An adequate coal supply for the Northwest is insured by a priority order issued on instructions from the President. This is the first of these orders to be issued, and bids fair to become a historic document. It reads as follows:

"Whereas by the act of Congress entitled 'An Act to Amend the Act to Regulate Commerce, as Amended, and for Other Purposes,' approved August 10, 1917, it is provided that during the continuance of the war in which the United States is now engaged, the President of the United States is authorized, if he finds it necessary for the national defense and security, to direct that such traffic or such shipment of commodities as, in his judgment, may be essential to the national defense and security shall have preference or priority in transportation by any common carrier by railroad, water, or otherwise; and

"Whereas, by virtue of the power conferred upon him by said act, the President has designated the undersigned as the person through whom the orders and directions authorized by said act shall be given; and

"Whereas it has been made to appear, and the President through the undersigned finds that under present conditions and volume of shipment sufficient bituminous coal will not be transported via lake movement to Lake Superior and Lake Michigan ports before the close of navigation to supply the requirements of the territory contiguous thereto, which is necessarily dependent upon movement by lake for supply of bituminous coal, and that an adequate supply of bituminous coal in that territory is necessary for the national defense and security, and that a condition exists requiring the exercise of the powers vested in the President by the aforesaid act of Congress, approved August 10th, 1917, and conferred by the President upon the undersigned, as authorized by said act:

"First—Now, therefore, by reason of the premises, the undersigned, in the name of the President, orders and directs that the railroad companies named in subdivision 'Third' below, serving Lake Erie ports in the transportation of bituminous coal for transshipment by vessel to ports on Lake Superior and Lake Michigan, shall and they are hereby directed, until further order, daily to give preference and priority in the distribution of cars to coal mines served by them and transport the same so that bituminous coal for transshipment as aforesaid by lake shall have preference and priority in transportation.

"Second—It is further ordered that all common carriers by water engaged in ship-

ment of lake bituminous coal, as aforesaid, shall and they are hereby directed, until further orders, to accept and receive all cargoes of such coal tendered to them for shipment as aforesaid, and to so load, transport and deliver the same, that it shall have preference and priority in transportation.

"Third—The railroad companies to which this order and direction applies are:

"The Baltimore and Ohio Railroad Company; Campbell's Creek Railroad Company; Cherry Tree and Dixonville Railroad Company; The Chesapeake and Ohio Railway Company; The Cincinnati, Hamilton and Dayton Railway Company; The Cleveland, Cincinnati, Chicago and St. Louis Railway Company; Coal and Coke Railway Company; Cumberland and Pennsylvania Railroad Company; Dents Run Railroad Company; Detroit and Toledo Shore Line Railroad Company; Detroit, Toledo and Ironton Railroad Company; The East Broad Top Railroad and Coal Company; Erie Railroad Company; The Hocking Valley Railway Company; The Huntingdon and Broad Top Mountain Railroad and Coal Company; The Kanawha and Michigan Railway Company; Kanawha and West Virginia Railroad Company; Kittanning Run Railroad Company; The Lake Erie and Western Railroad Company; Lake Erie, Franklin and Clarion Railroad Company; Louisville and Nashville Railroad Company; The Monongahela Railway Company; Morgantown and Kingwood Railroad Company; The New York Central Railroad Company; The New York, Chicago and St. Louis Railroad Company; Norfolk and Western Railway Company; The Northern Ohio Railway Company; Pennsylvania Company; The Pennsylvania Railroad Company; Pere Marquette Railroad Company; The Pittsburgh and Lake Erie Railroad Company; Pittsburgh, Chartiers and Youghiogheny Railway Company; The Pittsburgh, Cincinnati, Chicago and St. Louis Railroad; The Sandy Valley and Elkhorn Railway Company; The Toledo and Ohio Central Railway Company; Toledo-Detroit Railroad Company; Toledo, St. Louis and Western Railroad Company; Wabash Railway Company; The Wabash Pittsburgh Terminal Railway Company; Washington Run Railroad Company; West Side Belt Railroad Company; West Virginia Northern Railroad Company; The Western Maryland Railway Company; The Wheeling and Lake Erie Railway Company; The Youngstown and Ohio River Railroad Company; The Zanesville and Western Railway Company."

Judge Robert S. Lovett, member of the War Industries Board of the Council of National Defense, in charge of priority, was designated by the President as administrative officer under the provisions of the Priority Shipments Act, approved August 10. Judge Lovett on August 20 issued the order relating to priority of coal shipments to the Northwest.

Early in August it became apparent to Mr. Peabody that more drastic steps had to be taken if the Northwest was to obtain its full requirements of coal. He called in conference representatives of the railroads and the operators most concerned. That they concurred in his views is indicated by the resolution adopted. Some interesting facts in connection with the Northwest situation were brought out at the meeting.

A subcommittee reported as follows on August 14:

It was determined that aggregate tonnage to move during the season of 1917 was	29,000,000
There has been forwarded to August 11, inclusive	12,000,000
The remainder to move August 1 to close of navigation, 1917, is.....	17,000,000
Period remaining embraces 16 weeks, requiring shipment at a weekly rate of	1,062,000
Coal now moving at a weekly rate of	940,000
The estimated weekly increase via the port of Toledo, based upon increased transportation efficiency	2,000,000
Based on present operation this gives a weekly tonnage of	1,140,000
Total for sixteen weeks	18,100,000

The foregoing represents a performance that can be made only under favorable seasonable conditions, or weather conditions, on the Great Lakes. In the event seasonable conditions compare with the average of the past twenty-five years the experience gained by the vessel owners determine that 50 per cent of this tonnage should be delivered with the close of the month of July; that the remaining 50 per cent should move as follows:

August	35 per cent.....	5,950,000 tons
September	30 per cent.....	5,100,000 tons
October	20 per cent.....	3,400,000 tons
November	15 per cent.....	2,550,000 tons
Total.....		17,000,000 tons

The spread of the remaining 50 per cent, however, will be altered by the fact that the Lake Erie Bituminous Coal Exchange has now perfected an arrangement with the vessel owners of all of the fleets navigating the Great Lakes, to the effect that an adequate supply will be supplied by the vessel owners at all Lake Erie ports as rapidly as cargoes of bituminous coal have been completed, under which conditions a substantial increase can reasonably be expected during the months of September, October and November, which, in effect, will represent an increase on approximately 3,000,000 tons over the same period 1916, provided coal is available to be moved.

Further discussion of the subject developed that the situation at the Lake Erie front is that the ports west of Cleveland are up to full normal operating capacity, and ports Cleveland and east to Erie, Pa., inclusive, are subnormal due to shortage of shipments from western Pennsylvania, Fairmont, Cambridge, and Ohio No. 8 Districts.

In order to bring a volume of lake coal to a tonnage adequate to Lake necessities, it is necessary to increase shipments from the above mentioned districts which, in the judgment of this meeting, can only be accomplished by observing the action proposed in Resolution adopted at a meeting held at Cleveland, Ohio, on August 1, between the Lake coal and iron ore shippers, representatives of the Northwestern dock interests, and railroads serving Lake Erie ports, arrived at after a thorough consideration of this question.

The resolution is as follows:

"That it is the sense of this meeting that in view of the fact that the measures taken by the War Board in the efforts to increase coal shipments to the northwest have proven ineffective, because of the con-

ditions recited above, that unless preemptory orders be issued from some authoritative source to all coal operators in the Pittsburgh District, the Fairmont District, and the No. 7 Ohio District, that they must ship 50 per cent of the cars (excepting cars for railroad fuel), furnished to their mines daily, to Lake Erie Ports for trans-shipment to the northwest until further notice, or until the present emergency is met, the situation in the northwest next winter will amount to a calamity."

This was confirmed by the meeting and recommended to the consideration of the coal and railroad governmental authorities, soliciting immediate action, if justifiable means can be found to make such action possible.

It was also resolved that to obtain the desired increase in the movement of coal to Lake Erie ports, that the same method of car distribution to all mines in all districts be observed, as is now being applied to railroad fuel coal.

Those present at the conference were F. S. Peabody, chairman, Committee on Coal Production; F. C. Baird, commissioner, Lake Bituminous Coal Exchange; G. L. Peck, chairman, Lake Coal and Ore Committee; Daniel Willard, chairman Advisory Committee, Council of National Defense; E. H. DeGroot, Jr., H. C. Barlow and A. G. Gutheim, Interstate Commerce Commission, Division of Car Service; C. M. Sheaffer, chairman, Commission on Car Service; William Collins, M. A. Hanna & Co., Cleveland; C. D. Caldwell, By-Products Coke Corporation, Chicago; George D. Cameron, chairman Executive Committee, Lake Coal Shippers, Cleveland; Wallace B. Donhan, vice-chairman, New England Coal Company, Boston; W. H. Groverman, secretary, Northwestern Coal Dock Operators' Association, Minneapolis; Arthur Hale, vice-president, Consolidated Coal Company, Baltimore; D. R. Lawson, secretary, Central West Virginia Coal Operators' Association, Fairmont; Harold F. Lane, Railway Age Gazette; J. D. A. Morrow, commissioner, Pittsburgh Coal Producers' Association, Pittsburgh; Peter Reiss, president, C. Reiss Coal Company, Sheboygan, Wis.; F. X. Patterson, Federal Trade Commission, Washington; W. J. Tomkins, traffic commissioner, Independent Salt Association, Chicago; Edward A. Uhrig, president, Milwaukee Western Fuel Company, Milwaukee; Charles D. Weeks, Milwaukee Coke and Gas Company, Milwaukee; R. S. McVeigh, vice-president, Island Creek Coal Company, Cincinnati; J. P. Yoder, Federal Trade Commission, and J. B. Zerhl, secretary, Pittsburgh Vein Operators' Association, Cleveland.

Owing to the limited season in which the Lakes are open to navigation, Mr. Peabody was anxious that this situation be handled first. With the tidewater coal exchange in operation, the New England problem presents less difficulties. Not only is it possible to continue coal shipments to New England in the winter, but the efforts both by rail and water are making promising headway toward relieving the situation.

In order to acquaint the President with their specific knowledge of the coal situation affecting the Northwest, Francis S. Peabody, the chairman of the committee on coal pro-

duction; John P. White, president, and William Green, secretary, of the United Mine Workers of America, conferred on August 17 with Mr. Wilson at the White House. Each was able to acquaint the President with many angles of the situation which had not been called to his notice previously. The granting of the priority order, which later was issued, was urged.

Some of the conclusions reached the middle of August by the railroads are expressed as follows by Fairfax Harrison, chairman of their War Board:

"Realizing that the question of providing an adequate fuel supply for the Northwest is one of national importance, involving the defense and security of the nation, because unless the fuel can be placed there prior to the close of navigation there will be a reduction next year in the food supply produced in that section and in the amount of iron ore shipped down the Lakes, and also much suffering among the people of Minnesota, Wisconsin and the Dakotas this winter, this committee has been untiring in its efforts to improve the situation."

"Although the cooperative efforts of the coal men, the Lake vessel owners and the railroads have, as already shown, increased 28.2 per cent the total movement of coal in the United States, this committee has been unable to direct that movement to the Northwest to the extent that is necessary."

"The committee desires to call attention to the fact that some of the extraordinary powers that have recently been vested in the Federal Government may enable the administration to apply a remedy which may result in getting the necessary coal to the Northwest prior to the close of navigation."

"In spite of the cooperative efforts of all, the amount of coal going via the Lake Erie ports to the Upper Lake ports is not enough, and the general situation today is as follows:

"Loaded into boats at Lake Erie ports:

"To August 11.....	11,890,000 tons
"Needed by the close of navigation	29,000,000 tons
"Balance to be loaded and moved	17,110,000 tons

"in the sixteen remaining weeks when Lake navigation is normally open.

"The amount of coal loaded into boats at Lake Erie ports, January 1 to August 12, is as follows:

1917.	1916.	Decrease.
11,890,000	14,397,000	2,507,000 tons

"Part of this decrease is due to the fact that navigation on the Lakes began three weeks later this year than in 1916, meaning a smaller movement in 1917 by 925,789 tons, based on 1916 figures. Part of the decrease also is because of less coal having sought markets via the Lake ports.

"For the purpose of expediting the move-

ment of coal via the Lakes, the 'Lake Erie Bituminous Coal Exchange' was formed, to take effect June 1, and this organization has been most helpful in expediting the movement.

"Numerous and almost continuous meetings have been held by all parties interested—the railroads, the coal producers, the dockmen, the vessel-men, and others—for the purpose of increasing the volume moving to and via the Lake ports.

"Due to a variety of causes, the total shipments of coal from these Lake Erie ports have not gone to the head of Lake Superior to the extent necessary, and this makes it doubly important to grant relief at once, as the fuel for domestic consumption in the great Northwest is largely supplied through Duluth and contiguous ports. It will be most difficult, if not impossible, to obtain relief during the winter months by rail shipments, because of the distance from the mines and weather conditions.

"The movement of iron ore is dependent in part upon the movement of Lake coal."

RUSSIAN SCIENTIFIC COMMISSION TO STUDY MINING PROBLEMS HERE

A Russian scientific commission is studying mining and metallurgical problems in the United States. It consists of:

Theodore Foss, Mining Engineer and Director of several mining works of the Ural Mountains; Ivan Goubkin, Mining Engineer and member of the Russian Geological Committee; Avenir Snietskoff, member of the Russian Geological Committee; Alexander Stepanoff, Secretary.

The Russian Ambassador describes the object of the commission's visit as follows:

"The purpose of the commission is to investigate conditions of the mining industry in the United States so as to utilize the knowledge for development of Russia's natural resources; to inspect the most important industrial works; obtain information of mining legislation, and government work in research and in administration of the field of geology and mining; to acquaint the representative government institutions of the United States as well as the people with the natural resources of Russia, their present developments and future possibilities."

Potash Bill Passes Senate

After considerable discussion the Senate, without serious opposition, passed Senator Pittman's bill authorizing exploration for and disposition of potassium. This bill follows the lines of the oil land leasing bill. It formerly was included in that measure but as serious opposition had developed as to the other minerals which did not apply to potash, Senator Pittman introduced a separate bill which would extend the power granted in the bill to cover the potash situation alone.

**WISCONSIN'S GEOLOGIST HELPS
UNCLE SAM ON WAR WORK**



Photo by Harris & Ewing

W. O. HOTCHKISS
Member War Minerals Committee

W. O. Hotchkiss, the state geologist of Wisconsin, who is spending much of his time in Washington at present, cooperating with the Government in its war research work, was born in Eau Clair, Wis. He attended the public schools at that place, and in 1903 was graduated from the State University as an engineer. For two years he did economic geological and mining engineering work in private employ. He then joined the faculty of the University of Wisconsin, and for three years was instructor in geology. He left this position to become state geologist and to serve on the state highway commission.

In the course of his work Mr. Hotchkiss has made careful studies of the geology of sections of the Lake Superior iron region, and in addition has done geological work in the cobalt district of Canada.

O. P. Hood, the chief mechanical engineer of the Bureau of Mines, has been placed in general charge of the station at Pittsburgh. Lawsum Stone has been made superintendent of the Pittsburgh station.

**IMPORTS OF LEAD
SHOW DECIDED INCREASE**

**Geological Survey Statement Shows that
268,952 Tons of Heavy Metal Were Con-
sumed During First Half of Year.**

The United States Geological Survey, Department of the Interior, has undertaken a midyear canvass of lead production, the results of which have just been tabulated by C. E. Siebenthal. For convenience of comparison half the corresponding quantities for the 12 months of 1916 are inclosed in brackets. The output of domestic desilverized lead, excluding desilvered soft lead for the first six months of 1917, was 152,231 short tons (158,235), the output of domestic soft lead, including desilverized soft lead, was 124,292 tons (117,879) and the output of lead produced from foreign ores and bullion was 29,539 tons (9,453).

In view of the scarcity of lead, the increase in lead of foreign origin is very encouraging. The greater part came from Mexico. According to the records of the Bureau of Domestic and Foreign Commerce, the total lead imported in the first six months of 1917 was 30,620 tons (17,665) of which 22,507 tons came from Mexico (12,099), and 4,569 tons came from Canada (3,153). The exports of domestic lead amounted to 29,241 tons (50,283) and of foreign lead 6,066 tons (4,940). The lead used in articles exported with benefit of drawback was 3,270 tons (2,585). Thus the total exports of lead were 38,577 tons (57,808). Disregarding stocks, the apparent consumption of lead in this country in the six months was 268,952 tons (230,587).

The production of new antimonial lead was 7,822 tons (12,019), and of secondary antimonial lead 1,959 tons (2,065). The output of secondary pig lead by regular ore smelters was 7,578 tons (5,548).

The average outside spot price of lead during the six months period was 9.9 cents a pound, as against 6.9 cents in 1916.

**MILLION-DOLLAR LABORATORIES
TURNED OVER TO BUREAU OF MINES**

The new million-dollar laboratories of the Bureau of Mines, located in Pittsburgh, are practically completed, and have been formally turned over to Van H. Manning, Director of the Bureau of Mines. It was the intention upon the completion of these buildings to dedicate them with a great meeting of the representatives of the mining and chemical industries, but the war caused a postponement of the plans. The buildings will constitute the principal experiment station of the bureau, and will be used for carrying on the investigations into mining methods and the use of fuels.

BOSTON RETAILERS SCORED IN GOVERNMENT REPORT

Federal Trade Commission Finds that They Did Not Hesitate to Take Advantage of Necessities of the Public to Boost Their Margins.

Reports are being made by the Federal Trade Commission on the retail coal situation in a number of cities. The following report on the situation in Boston is typical of others which are appearing:

In making its investigation into the retail situation in Boston, the Federal Trade Commission collected from fifty-one retailers of anthracite information as to the amount of coal received, the prices paid to the producer or wholesaler, as the case might be, the prices at which the coal was resold to the consumer and the margins obtained (the margin being the difference between the cost price to the retailer and the sales price to the consumer). The investigation was conducted by Messrs. Gordon and Wright, agents of the Commission.

RECEIPTS OF ANTHRACITE

The fifty-one retailers from whom data were obtained received during the first five months of 1917, 652,017 net tons of anthracite. During the corresponding months of 1916 they had received 778,387 net tons. The receipts in 1917 were thus only 83.8 per cent of the receipts in 1916. The existence of this shortage in the face of an increased output of anthracite (the commercial production of anthracite was nearly three million tons larger in the first five months of 1917 than in the corresponding period in 1916) shows clearly the situation in Boston, and, it may be added, in New England, also. It is obvious that the needs of Boston have not been taken care of.

This loss in tonnage was by no means uniformly distributed among the retailers. In fact sixteen retailers received more coal during January to May, 1917, than during January to May, 1916, their increased receipts totaling 44,418 tons. Of this amount over half (26,023 tons) went to one dealer. On the other hand, thirty-five retailers showed decreased coal receipts during January-May, 1917, these decreases totalling 170,788 tons. In a number of cases the percentage of decline in the amount of coal received by retailers was quite large. Several retailers failed to receive even half as much coal during the first five months of 1917 as they had received during the first five months of 1916; and one retailer received only about one-sixth of his normal tonnage.

No favored treatment appears to have been shown the largest companies as a class. However, one of the leading companies was favored to an unusual degree. In the face of a marked shortage, it received 26,023 more

tons than during the corresponding period of 1916. This increased tonnage represented an eighty-seven per cent increase in its receipts of anthracite.

RETAIL PRICES

The household prices of egg, stove and chestnut coal were almost uniformly maintained in Boston during April and May, 1917, at \$9.50 per net ton, and the household price of pea coal was almost uniformly maintained at \$8.50. On industrial sales of anthracite the retailers received varying prices, but most of them charged during April and May either \$9.25 or \$9.50 for egg, stove and chestnut, and either \$8.25 or \$8.50 for pea. Generally speaking, the larger retailers charged the lower price, and the smaller retailers the higher price, but this was by no means universally the case.

The large retailers (those who bought 10,000 tons or more during January to May, 1916) obtained their coal on more favorable terms than the small retailers. On egg coal the large retailers on the average paid 36 cents less per ton in April than the small retailers, and 17 cents in May; on stove coal they paid 39 cents less in April, and 35 cents less in May; and on chestnut coal they paid 49 cents less in April and 48 cents less in May.

MARGINS OBTAINED

The margin, as already stated, is the difference between the cost price to the retailer and the sales price to the consumer. The typical household price of egg, stove and chestnut coal in both April and May was \$9.50 per ton. (One or two retailers in both of these months charged as much as \$10.00 per ton, but \$9.50 was almost the universal price.) By combining these figures, that is, subtracting the cost figures from \$9.50, we obtain the average margins.

The average margin on egg coal obtained by all the retailers reporting was \$2.85 in April and \$2.75 in May; on stove coal it was \$2.69 in April and \$2.63 in May; and on chestnut coal it was \$2.65 in April and \$2.56 in May. Since \$2.00 a ton was ordinarily an ample margin, it is clear that the retailers on the whole received very large margins, and particularly is this true of the large retailers, who during April-May received margins averaging \$2.92 per ton.

Individual retailers, of course, obtained margins far exceeding the average. On egg coal, for example, there were five large retailers and three small retailers who in April obtained margins exceeding \$3.50 per ton; and there were four large retailers and three small retailers who obtained these margins in May. Indeed one large retailer (the same concern that increased its coal receipts during January-May, 1917, by eighty-seven per cent, in the face of a considerable shortage) obtained margins of \$4.10 and \$4.42 on egg coal in April and May, respectively; of \$3.91 and \$4.05 on stove coal in April and May;

and of \$3.94 and \$3.85 on chestnut in April and May.

In conclusion, it may be said that the coal retailers of Boston, with a few notable exceptions, did not hesitate during the period under discussion to take advantage of the necessities of the public, and to charge for anthracite a price that netted them unreasonable margins.

CERAMIC INDUSTRY GETS AN EXPERIMENT STATION

Lack of Technical Knowledge Has Greatly Hampered Progress of Clay Working—Much Capital Invested.

The establishment of a mining experiment station at Columbus, Ohio, under the jurisdiction of the Bureau of Mines, to represent the ceramic industry of the United States, has been authorized. Columbus was selected as the site for the station because it is the capital of the state, recognized as the center of the clay working and allied industries, and also because the bureau can work in cooperation with the School of Ceramics at Ohio State University, and also gain the expert advice of Prof. Edward Orton and Prof. Arthur S. Watts, noted authorities of the subject of ceramics, who are connected with that school.

Director Van H. Manning, of the Bureau of Mines, in recommending that the subject of ceramics be taken up at this station, said: "No industry in this country offers more opportunity for constructive effort and new development than does the ceramic industry. Moreover, the clay working and allied industries represent one-third of all capital invested in crude mineral industries, and are, therefore, entitled to the same consideration as other industries now under study by the Government. However, the industry is unprogressive, largely on account of technical knowledge. The European research, upon which the progress of the industry has largely depended, is not now available. Moreover, this information is not always applicable to American processes and materials. In the clay working industries, as in many other mineral industries, the utilization of low-grade materials is now imperative in order to prevent exhaustion of those high-grade materials which, if exhausted, would leave us at the mercy of foreign countries.

"In the ceramic industry the fuel consumed represents approximately 20 per cent of the value of the wares produced, and as a rule a great deal of this fuel is unnecessarily wasted. Hence the value of the fuel wasted is very large, and the lessening of this waste demands immediate study. Moreover, the manufacturing wastes, due to faulty methods or practice, is very great, and at the present time there is no means of subsequently recovering this waste. It is believed that enor-

mous savings can be effected in the clay working industry, but the subject has never been adequately studied, because the necessary outlay has been considered too great for individual firms to make.

"Moreover, manufacturing processes which now endanger the lives and health of employees should be investigated promptly. Investigations upon a laboratory scale have proven inadequate for the preparation of process specifications such as the industries demand before they will adopt less wasteful methods."

CAR SITUATION SHOWS A MARKED IMPROVEMENT

The excess of unfilled car requisitions over idle cars, or what is ordinarily but inaccurately termed car shortage, was only one-fourth as great on August 1, 1917, as on May 1, 1917.

The excess of unfilled car requisitions on May 1 was 148,627; on June 1 it was 106,649; on July 1 it was 77,682, and on August 1 it had been reduced to 33,776.

This result has been accomplished at a time when the railroads are supplying from 15 to 20 per cent more freight service with the same number of cars than was being given this time last year, for the railroads handled in July a tremendous increase in both government and commercial traffic.

The movement of cantonment supplies alone occupied the full services of more than 30,000 cars. There was also an extraordinarily heavy demand for cars to transport food products, as well as materials to and from munition factories.

The result above achieved has been accomplished by cooperation with the railroads of shippers, regulating bodies, and the public generally. This cooperation has made possible the intensive loading of freight cars, prompter unloading, the elimination of a large amount of unnecessary passenger train service, and an opportunity generally to utilize the railroad plant efficiently.

The aim of the railroads at the present time is to put each car to the greatest possible use, to have empty cars placed where they are most needed, to prevent overlapping and unnecessary service; in other words, to make the entire railroad system of the United States the most effective possible transportation agency in winning this war.

Anthracite Committee

A committee of anthracite operators, which may be termed the "War Board" of that industry is constituted as follows:

S. V. Warriner, Chairman, 437 Chestnut Street, Philadelphia; W. H. Williams, I. B. Dixon, S. T. Peters, W. H. Truesdale, C. F. Huber, E. E. Loomis, W. J. Richards, P. C. Madeiro, John Markle, Jackson E. Reynolds and E. W. Parker, Secretary.

**MINING CONGRESS MEMBER
WHO IS DOING BIG THINGS**



Photo by Harris & Ewing

FLETCHER HAMILTON
California's Mineralogist

As chief executive of the California State Mining Bureau, State Mineralogist Fletcher Hamilton occupies a highly important position in the mining industry, not only of California, but of the nation.

California is isolated to a certain extent from the Industrial centers of the East on account of the long railroad haul and high freight rates, but this adverse condition is of vital importance in but few instances. Practically every mineral substance required in war, as well as in peace times, is either produced, or is possible of commercial development in that state, and many valuable materials located there are found in no other section of the country.

Realizing the fact that a complete and detailed knowledge of these developed and undeveloped mineral resources will without doubt materially aid in the successful completion of the war in which the United States is now engaged, Mr. Hamilton has assigned his staff of trained assistants to the work of making field investigations and the bringing up-to-date of information already on record, relative to "war minerals" in particular. Thus

the buyer, the producer, and the government itself will find available for immediate use, definite facts which may at any time be required for the advancement of the country's welfare, all without cost and without loss of time. The energy and foresight thus exemplified are but characteristic of the man, who is eminently fitted to direct the work of the Mining Bureau which has a record of thirty-seven years of achievement behind it, in which the interests of the mining public have at all times been most efficiently served.

Fletcher Hamilton was born at San Francisco in 1882, was educated in the public schools of that city, and graduated from the University of California in 1904, as mining engineer. After graduation he worked one year as engineer at the mines of the Kimberly-Montana Mining Company, Montana, then returned to California as engineer and assistant manager of the Dairy Farm Mine in Placer Company. After serving in this capacity for two years he became interested in a mining property in Mexico, the development of which he directed until July, 1909. At that time he returned to California, and operated a placer mine for several years in addition to which he carried on a consulting practice, examining mines in California, Nevada, and Mexico. This work was given up after receiving his appointment as State Mineralogist, January, 1913.

Mr. Hamilton is an active member of the American Mining Congress.

**POMERENE ASKS FEDERAL
CONTROL OF STEEL TRADE**

Would Regulate Iron Mining and Steel Manufacture After Manner Prescribed for Coal.

That Senator Pomerene of Ohio is not content to limit his ideas of Government control to the coal situation is indicated by a bill introduced by him which provides for regulating the production, sale, and distribution of iron ore, iron, steel, and their products. The bill is drawn in practically the same form as his amendment which became the fuel section of the food control act. The bill was referred to the Committee on Interstate Commerce, of which Senator Newlands of Nevada is the chairman. Senator Newlands, in discussing the matter on August 20, intimated that the immediate consideration of the bill is improbable.

Charles P. White, who has been commissioner of the Pittsburgh Vein Operators' Association, has resigned to become general manager of the new Clarkson Coal Mining Company, of Cleveland, with offices in the Rockefeller Building.

**GOVERNMENT SPECIALISTS WELL
KNOWN TO MINING MEN**

A. G. White, mine economist for the Bureau of Mines, was born in Brandon, Wis. His early education was obtained in the public schools of that place. He attended high school at Waupaca, Wis., after which he attended Lawrence College, at Appleton, from which institution he was graduated in 1907 with a degree of B. A. He then taught science for one year at the law school at Sparta, Wis., after which he proceeded to the University of Wisconsin, where he completed the course in economics and received an A. M. degree. Upon finishing his work in the University of Wisconsin, he entered the University of Pennsylvania, where he spent four years doing graduate work. During the same time he served as a member of the faculty of Wharton School of Finance and Commerce, an affiliated institution.

On completing his graduate work in 1913 Mr. White came with the Bureau of Mines as its economist. His early assignments were to field work in the anthracite and bituminous regions of Pennsylvania. He also did work in the oil fields of Oklahoma, Texas, and California. Since becoming a member of the bureau his work has been chiefly with fuel problems. He made a study of the domestic fuel situation at Salt Lake City. His work with the bureau, however, has included a study of its organization and relation of its work to other activities with the idea of preventing duplication and specifying means for helpful coordination. He made a study of the competitive fuel and power situation in the West which deals with the relationship of coal, oil, and electric power.

At present Mr. White is engaged importantly in the war work which is being done by the Bureau of Mines. He is secretary of the war minerals committee, which represents the Bureau of Mines, the United States Geological Survey, the State Geological Surveys, and the American Institute of Mining Engineers.

A photograph of Mr. White was published in the last issue of the Journal.

**FEDERAL TRADE COMMISSION
PROBES RETAIL COAL PRICES**

After an investigation of the retail coal situation in Washington, which stirred up a cyclonic protest, the Federal Trade Commission reached some interesting conclusions. As such investigations will be undertaken in other cities, there is general interest in the conclusions reached. Some of them are as follows:

"The retail prices for anthracite of Washington dealers for May, 1917, varied widely between the large and small dealers, the highest prices being charged by the larger dealers

who have their own storage facilities, and the lowest prices being charged by the smaller dealers.

There were wide variations between the margins of different dealers. (By margins is meant the difference between the cost per ton to the retailer and the price charged the consumer.) The largest margins were realized by the larger dealers. These higher margins were partially due to lower cost per ton of coal to the dealer, but mainly to the higher prices charged.

The larger dealers have been receiving margins from \$1 to \$2 per ton greater than those of the smaller dealers, who do not have storage facilities. Such a difference is an exorbitant charge for the service of purchasing and storing coal. This function is provided for the smaller dealer by the wholesaler, whose margin, including a profit, in no case exceeded 50 cents per ton in the month of May.

It would be impossible for all dealers to reduce their margins to the level of the lowest margins for they evidently do not cover the cost of handling the coal, but the Federal Trade Commission regards such margins as \$2.75 to \$2.90 per ton, which were realized on each ton of egg, stove and nut coal handled by one dealer in the month of May, as exorbitant and wholly unjustified.

This dealer estimates his costs of doing business at \$1.50 per ton. The above margins, therefore, yielded net profits of from \$1.25 to \$1.35 per ton for the month of May. Such margins and profits are all out of proportion to the service rendered the public, and should be promptly reduced to a figure that will yield a moderate and reasonable return.

In New York City the dealers who are the controlling factors of the market regarded 25 cents per ton as a fair and reasonable return in the past, while an additional 10 cents per ton is regarded as sufficient to compensate for the additional difficulties of management at the present time."

**OVER 35,000 RETORTS AT
ZINC SMELTERS ARE IDLE**

The United States Geological Survey, from returns representing 99 per cent of the output, estimates that the production of spelter during the first six months of 1917 was 364,000 short tons, as compared with 351,000 short tons during the last half of 1916. Stocks on hand are estimated at 33,000 tons, as compared with 17,600 at the beginning of the year. A large number of retorts, about 35,000, including 14 complete plants, were reported idle June 30, in addition to the retorts engaged in refining prime western metal and in redistilling zinc ashes. The complete report will be ready for publication in about two weeks.

CURRENT FEDERAL LEGISLATION

Eight thousand, six hundred and fifty-eight bills have been introduced during the present session of Congress of which 2820 are Senate bills and 5838 are House bills. Chief interest since our last report has been centered in the Lever food conservation bill referred to elsewhere. Of bills more or less directly of interest to mining men are the following:

S. 1816 by Senator Robinson providing for the enlargement of the Interstate Commerce Commission so as to consist of nine members with terms of seven years and salary of \$10,000 has been passed by the House and Senate and signed by the President.

S. 2156 by Senator Pittman, providing for exploration for and disposition of potash lands was passed by the Senate with a special provision that potash deposits in the public lands in San Bernardino county, California, may be operated by the United States or may be leased by the United States upon satisfactory terms. The bill also provides that any leases granted shall provide that the price at which the product is sold shall be reasonable and that the President may require the use of the product wholly within the United States. This bill is now held by the Speaker of the House of Representatives but will be referred to the House Public Lands Committee.

S. 2736, by Senator Cummins, provides for a bureau of publicity in the Department of Commerce, to have charge of all advertising of the Federal Government; to secure greater publicity for information intended for the general public and coming from the various departments of the Government, and to co-operate with organized advertising interests of the nation in promoting and securing legislation to compel adherence to the honesty and reliability of all firms and individuals of the nation. Referred to the Committee on Commerce.

S. 2756, by Senator Pomerene, provides for the regulation of the production, sale and distribution of iron ore, iron, steel and their products. Referred to the Committee on Interstate Commerce.

S. 2783, by Senator Overman, provides that defendants in civil suits or proceedings now or hereafter pending who are actively engaged in the military service of the United States shall be granted a temporary stay of any action, not to extend beyond three months after termination of service nor beyond six months after the culmination of the war.

S. 2812, introduced by Senator Myers (for Mr. Walsh), provides for the sale of coal lands by the Government at a minimum price of \$10 per acre for lands more than 15 miles away from a completed railroad and \$20 per acre within such limit, the Secretary of the

Interior being authorized to offer such lands to competitive bidders, with the right to reject any and all bids. The bill further provides for the leasing of coal lands through competitive bidding or such other methods as the Secretary of the Interior may adopt in tracts of 40 acres or multiples thereof not to exceed 2,560 acres in any one tract, that for the privilege of mining coal under such lease a royalty shall be paid of not less than 2 cents per ton and annual rental of 25 cents an acre for the first year, 50 cents for the second and third years, and \$1 per acre thereafter, such rental to be credited against the royalties accruing for such year. The bill further provides for a lease upon 10 acres to any one person or association without royalty for domestic purposes. The bill provides for the leasing of phosphate lands at a rental of \$1 per acre for the lands, together with such royalty as may be stated in the lease. The bill further provides for the granting of permits to prospect for oil upon 640 acres within 20 miles of any producing oil and gas well, and 2,560 acres more than 20 miles from any producing oil or gas well, the prospecting permit to be for two years, with a requirement that a well 500 feet deep shall be sunk within one year, and that within two years wells aggregating 2,000 feet shall be drilled. The permittee is entitled to a patent upon one-fourth of the land, including in his prospecting permit in case he shall discover oil or gas. Leases are to be for a period of ten years, and call for a royalty of 25 per cent of the gross value secured from the lands embraced within permit until the permittee shall have made application for patent. The permittee is also given the right to ask for lease upon the remaining lands included in his permit. The rights of claimants who have been in contest with the Federal Government are covered by Sections 16 and 17, as follows:

Sec. 16. That upon relinquishment to the United States within ninety days from the date of this act or within ninety days after final denial or withdrawal of application for patent, of any claim or subdivision thereof asserted under the mining laws prior to July third, nineteen hundred and ten, to any unpatented oil or gas lands included in any order of withdrawal or within naval petroleum reserve numbered two, the claimant or his successor in interest shall be entitled to a lease for each asserted mineral location of one hundred and sixty acres or less or any subdivision thereof upon which such claim is based and upon which said claimant, his predecessors in interest, or

those claiming through or under him, have, prior to the date of this act, drilled one or more producing oil or gas wells, such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in development and operating such land, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act: Provided, however, That no claimant who has been guilty of fraud in the location of any oil claim or gas bearing lands shall be entitled to any of the benefits of this section, nor shall his assignee be entitled thereto unless he affirmatively shows that prior to the passage of this act he purchased such lands in good faith, for a valuable consideration and without actual knowledge of such fraud: Provided, further, That upon the issuance of said lease and prior to the delivery thereof the applicant therefore shall pay to the United States for one-eighth of the oil or gas produced and saved from the lands included in said claim at the current field price at the time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease: Provided, further, That all royalties received under the provisions of this section from said naval petroleum reserve numbered two, whether in oil or money, shall be delivered or credited to the United States Navy: And, provided further, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve numbered one, in the State of California, or naval petroleum reserve numbered three, in the State of Wyoming: Provided, further, That the provisions of this section shall be applicable in all cases provided for herein, including cases where court actions have been heretofore commenced or may hereafter be commenced by the United States Government affecting the title to such lands or the product thereof.

Section 17 provides that the rights of any person who on the first day of August, 1917, was a bona fide occupant or claimant of oil or gas bearings lands shall not be affected or impaired by this act. The bill provides for the leasing of potassium lands and for prospectors' permits giving exclusive rights to prospect therefor for periods of two years, except upon lands in San Bernardino county, California (which are covered by provisions of S. 2156, above referred to). The bill also provides for expiration permits upon sodium lands and the granting of patent to one-quarter of the land described in permit. These leases are to be for indeterminate periods and under such rules and regulations as may be fixed by the Secretary of the Interior.

H. R. 5668, by Congressman Crosser, provides for the creation of a colonization board

to consist of the Secretaries of the Departments of Labor, of the Interior and of Agriculture, of which the Secretary of Labor shall be chairman. This board is authorized to examine the public domain and reservations owned by the United States and adjoining lands not so owned. It may set apart or withdraw from settlement, location, sale or entry any of the public lands in the United States, including the district of Alaska, and reserve the same as farm-colony reserves, develop plans for developing and colonizing same, and provide for the development and supply of timber, coal, power and other services, and to set aside so much of the timber, coal, water-power sites or other resources owned by the United States as may be necessary to the settlers in such projects. The bill provides for a colonization fund not exceeding in the aggregate \$50,000,000, for the issuance of certificates of indebtedness to the United States in denominations of \$20 or multiples of that sum, payable fifty years after date, drawing interest at 3 per cent per annum, said certificates of indebtedness to be exempt from taxes. The bill provides for an eight-hour day, and that the minimum wage for any class of labor shall not be less than the average in the locality. The bill authorizes the board to make regulations for safety, compensation, sick insurance and an adequate system of sanitation, housing and general living conditions of workers engaged in any operation under the act.

H. R. 5788, by Congressman Kelly of Pennsylvania, provides for the control of the distribution of coal, oil, copper, iron and other metalliferous minerals, timber and water power. The bill authorizes the President to take over and operate such properties, and that no compensation shall be paid for the inherent and site value of any natural resources in the land, nor for other intangible elements. The sum of \$2,500,000 is appropriated for administration expenses, and for the carrying out of the provisions of the act the sum of \$250,000,000 is appropriated. Bill referred to the Committee on Interstate and Foreign Commerce.

H. R. 7595, by Congressman Raker, provides for the relief of Red Cross workers from the assessment work provided for by the existing statutes. This bill is a substitute for H. R. 5428, reported in the August issue.

H. R. 2316, by Mr. Webb, has, with amendments, been favorably reported by the Committee on Judiciary. This bill provides that combinations engaged in foreign trade shall not be subject to the provisions of the Sherman anti-trust law.

H. J. Res. 142, by Congresswoman Rankin, provides for the extension of the powers of the Lever bill, so that the President shall be authorized to take over for use or operation by the Government all metalliferous mines the product of which is a necessary war material in the manufacture of supplies needed in the common defense.

**ILLINOIS LOANS DEWOLF
TO THE BUREAU OF MINES**



Photo by Harris & Ewing

FRANK W. DEWOLF
Assistant Director Bureau of Mines

The new assistant director of the Bureau of Mines, Frank W. DeWolf, comes to the work on detail from Governor Frank O. Lowden, of Illinois. Mr. DeWolf is chief of the Illinois Geological Survey and president of the Association of American State Geologists as well as a member of the American Institute of Mining Engineers and other scientific and engineering societies.

With the entrance of the United States into the war, Mr. DeWolf became active in an effort to learn how geologists and mining engineers might be effectively engaged, and he was active in helping to organize the War Minerals Committee which is successfully co-ordinating the work of the Bureau of Mines, the Geological Survey and of State Surveys and mining engineers in private life.

Mr. DeWolf's present work with the Bureau has special reference to its war activities, and on the administrative side his experience as director of the Illinois Survey for eight years, engaged in geological and mining investigations, has peculiarly fitted him to be a useful assistant to Director Manning. He has been actively interested for years in the

welfare of the Bureau, and has formerly served in a consulting capacity.

Mr. DeWolf was born in Vail, Iowa, in 1881. He is married and has three children at home in Webana, Ill. His early education was secured in the high schools of Des Moines, Iowa, and Chicago, Ill. This was followed by a scientific course at the University of Chicago, where Mr. DeWolf specialized in geology and chemistry and pursued a post-graduate course in geology. Entering the service of the U. S. Geological Survey in 1904, his assignments were to Pennsylvania coal and oil fields. Later, on assignment to Illinois and on joining the Illinois Survey, as assistant director, under Dr. Bain in 1907, his work continued in economic lines including coal, oil, fire clay, cement material and other nonmetallic minerals. His present motto is "Beat the Kaiser."

**SUGGEST USE OF ZINC
PIGMENTS FOR THOSE OF LEAD**

That the country faces a shortage of lead and a surplus of zinc, with a resulting lead price far above the average and a zinc price reported as below cost, is the situation which has called forth the following expression of opinion from one in close touch with each of the industries:

Owing to the decline in lead imports from Mexico in recent years, the great burden of supplying the war demand for lead has fallen upon domestic producers. A gain of 25 per cent in domestic mine output of lead was made in 1914, and one of 10 per cent in 1916, but the prevailing high prices indicate that the supply is not yet adequate. The present price of lead is 60 per cent above the average price in 1916. It has been estimated that 25 per cent more lead will be needed in 1917 than was used in 1916. Domestic ore resources to meet this demand are not in sight.

Early in the war zinc rose to a high price, greatly stimulating the output of spelter, which in 1916 was double what it was before the war. The result has been a considerable overconstruction of smelting capacity and latterly some overproduction of spelter, the stock on hand June 30, 1917, being about 33,000 tons, as compared with 17,598 tons at the close of 1916. The present price of spelter is 8.5 cents a pound, as against an average of 13.4 cents in 1916 and 12.4 cents in 1915. The smelters claim that 8.5 cents is less than it costs to make spelter at present ore, fuel and labor prices. They are corroborated by the fact that 15 per cent of the retort-smelting capacity (35,000 retorts, including 14 plants) was idle June 30, 1917. The number of idle retorts is no doubt considerably larger at present. On the other hand, "sheet ground" operators in the Joplin district say that the present price of zinc concentrates does not pay the cost of production, and they are closing down. If these mines close entirely, it will cut off the whole supply of zinc concentrates from which sheet zinc is made, as well as lead concentrates containing over 20,000

tons of lead annually. This is more than the whole gain in pig lead production during 1916.

A remedy for the scarcity of pig lead and the surplus of spelter may be found in the substitution of zinc pigments for lead pigments. Lead pigments produced in 1916 contained a total of approximately 175,000 tons of lead. These pigments, however, were not all white pigments for which zinc pigments could be substituted. They comprised red lead, orange mineral, litharge and sublimed blue lead. Nevertheless, white lead pigments alone contained more than 110,000 tons of lead. The substitution of zinc pigments for these lead pigments would relieve the lead stringency, and by making a market for more zinc would absorb some of the plethora of zinc ore. As a war measure, the prohibition of the manufacture of white lead because the lead in pigments is needed in munitions is on the same basis as the prohibition of the manufacture of distilled liquors because the grain is needed for foodstuffs.

It may not be desirable to substitute zinc for lead in toto, however, for in general a mixture of lead and zinc pigments with some inert base is found preferable for most purposes. Though classed with the zinc pigments, leaded-zinc oxide may contain as much as 25 per cent of lead. The output of this pigment is rapidly increasing. A recent trend in zinc smelting practice by extension would lend itself admirably in this connection. At a number of smelters the retort residues, containing from 3 to 7 per cent of zinc, are being burned on Wetherill grates and the zinc oxide collected in baghouses. Owing to impurities in the residues and to excess of carbon, it is difficult to obtain a merchantable zinc pigment. But a portion of the product is merchantable, another portion can be made so by reburning in a muffle furnace, and nonmerchantable oxide can be used in making lithopone. The small quantity of oxide recovered, however, because of the low zinc content of the residue, makes profitable operation doubtful. Spelter is usually made in three "draws;" the first and second draws are best in quality, for the last draw contains more lead and iron because a higher temperature is maintained in order to drive off the last of the recoverable zinc. The last draw, therefore, is expensive and poor in quality. It has been proposed to omit the last draw and carry the second draw a little further, thus leaving enough zinc in the residues to make the recovery of zinc oxide profitable. This system of operation would reduce the surplus of spelter production and would increase the zinc oxide production. It would seem feasible to smelt zinc concentrates containing considerable lead in this way, avoiding lead in the spelter by taking only two draws and recovering the lead in leaded-zinc oxide. This would tend to the conservation of zinc, because it would prevent the loss of zinc which results from making the clean zinc concentrate at present demanded by zinc smelters.

OPERATORS' ASSOCIATION SELECTS ITS DIRECTORS

Plans Delayed by Confusion Attending President's Price-Fixing Decree

Completion of the plans of the National Association of Coal Operators, which was to have been accomplished at a meeting called in Washington the middle of August, was not undertaken at the meeting, due to the changed conditions which were brought about by the President's price-fixing activities and the appointment of a fuel dictator. Other than naming a board of directors, practically the entire time of those who gathered for the meeting of the National Association of Coal Operators was taken up in rendering assistance to the committee on coal production in the matter of compiling cost data for presentation to the Federal Trade Commission. In this the representatives of the coal operators worked with a number of the auditors of large coal companies, who had been summoned to Washington by Francis S. Peabody for that purpose. Before proceeding with the selection of a secretary and the rental of offices, the National Association decided to call all coal operators in the United States together for a conference, at which the matter of coal costs could be discussed, and incidentally some of the problems concerning the activities of the National Association.

The call for the meeting, which afterwards was postponed, reads as follows:

"In view of the action of the President, with reference to the bituminous coal industry of the country as reported in the morning press, it is deemed of the greatest importance that the coal producers of the United States meet as soon as possible for the purpose of discussing and considering the abnormal conditions under which the industry is now asked to labor.

"Accordingly, the National Association of Coal Operators extends an invitation to all bituminous coal producers of the country to meet at the William Penn Hotel, Pittsburgh, Pa., at 10.00 o'clock, a. m., Wednesday, August 29, 1917.

"Should you desire to communicate with the National Association of Coal Operators prior to this meeting, please address Mr. D. A. Morrow, Secretary, Pittsburgh Coal Producers Association, 323 Farmers Bank Building, Pittsburgh, Pa."

It is expected that this meeting will be held in the near future, but the date has not yet been fixed at this writing.

The board of directors of the National Association is as follows: H. N. Taylor, Kansas City, Mo.; F. C. Honnold, Chicago, Ill.; A. M. Ogle, Terre Haute, Ind.; Geo. H. Barker, Columbus, Ohio; Rembrandt Peale, 1 Broadway, New York City; J. H. Wheel-

wright, Baltimore, Md.; Howell J. Davis, Knoxville, Tenn.; W. K. Field, Pittsburgh, Pa., and J. J. Tierney, Philadelphia, Pa.

The activities of the Association are outlined as follows:

Publicity.—It is the belief of this Committee that detailed current information should be collected and distributed from the Secretary's office. The Committee feels that such reports will be of very great value to the coal producers and the general public and will be of direct benefit to the entire country in the present crisis as well as in the future of the industry as a whole.

Statistics.—The Committee recommends the adoption of a standardized system for making reports to the National Association, and urges close cooperation between the Association, the Committee on Coal Production of the Council of National Defense, the Federal bureaus and commissions, etc., in the collection of all necessary statistics and reports. It is further recommended that the National Association act as a bureau of information for member associations.

It is believed that one of the functions of the National Association should be the promotion of harmonious feeling among the member associations. It is further believed that all of the recommendations made by the Committee are entirely within the law and in line with the desire for cooperation expressed by the Secretary of the Interior, by the Federal Trade Commission, and the Committee on Coal Production of the Council of National Defense. The carrying into effect of the above purposes means the greater preservation of the life of the men employed in and around the coal mines, and the conservation of the fuel resources of the country.

DECLARATION OF PURPOSES

Whereas, cooperative effort on the part of the coal producers in the United States is deemed essential to—

The proper conservation of the coal deposits of the United States by increasing the yield per acre to the maximum;

Cooperation with public officials, both State and National,

The ascertainment and compilation of data directly and indirectly bearing upon the production, transportation, and marketing of coal;

The prompt enforcement of State and Federal laws relating to mines and miners.

The ascertainment and installation of uniform cost-keeping methods and uniform and improved accounting systems;

The ascertainment and lowering of production costs;

The establishment of bureaus to furnish pertinent information to the coal producers, the buyers and users of coal, the officials of Federal and State governments, and to the public generally;

The establishment and maintenance of proper relations between the carriers and the

coal-producing companies, including the ascertainment of facts and the compilation and distribution of data and statistics relating to transportation from the several coal fields to the markets;

The encouragement and fostering of the general welfare of the United States bituminous coal-mining industry; and

Whereas, It shall be thoroughly understood by the members of this Association that no part of the machinery of this Association will be permitted to be used to establish, regulate, maintain or control prices for the sale of coal, to divide territory, to regulate, diminish, or control the production of coal, or limit or control competition; and that no information shall be collected or distributed respecting any prices which any member intends or expects to ask under any circumstances whatsoever.

Therefore, the association and bureaus of coal operators in the United States have formed the National Association of Coal Operators and have adopted the following articles of association and by-laws:

ARTICLES OF ASSOCIATION

I.

Title.—The title of this Association shall be the National Association of Coal Operators. Its headquarters shall be in the city of Washington, D. C.

II.

Membership.—Section 1. *Eligibility.* The membership of the National Association of Coal Operators shall consist of such State and District Associations and bureaus of coal operators who are actively engaged in the production and distribution of coal as shall apply for membership and qualify therefor under these articles of association and by-laws.

Sec. 2. *Election.* Election to membership shall be a majority vote of the members present at any meeting of the Executive Committee.

Sec. 3. *Termination of Membership.* Any association may terminate its membership in the Association by written notice upon the payment of any assessment due at the date of such notice.

Any member of this Association may be expelled for cause by a two-thirds affirmative vote of the members of the Executive Committee present at any meeting after thirty days written notice shall have been served upon such member and shall have been sent to all the other members.

IV.

Management.—The management of the Association shall be vested in an Executive Committee, to consist of one person selected by each of the member associations from the officers of the companies composing its membership.

The Executive Committee shall select a president, vice-president, secretary and treas-

urer, and shall appoint such standing committees or special committees as they may find necessary to properly carry out the purposes of the Association. The duties of the above officers shall be such as usually pertain to these positions, and are necessary to carry out the purposes and activities of the Association indicated in the foregoing preamble and declaration of purposes.

The Executive Committee shall also employ a general manager (title to be agreed upon), a counsel and such other employees as may be necessary, define their duties, and fix their salaries. It shall levy such assessments on member associations on a pro rata basis of tonnage represented as may be necessary for the financial support of the National Association. It shall exercise general direction of the management of the Association, and shall make such rules and regulations as are necessary to carry on the work of the Association.

When first elected to the Executive Committee the members shall be divided by lot into four groups as nearly equal in number as possible, whose terms of office shall be three, six, nine, and twelve months, respectively. Upon the expiration of these periods their successors thereafter shall be elected for twelve months.

V.

Meetings.—Section 1. Executive Committee. Meetings of the Executive Committee shall be held quarterly on the _____ day of the month. Special meetings may be called by the President or the General Manager when in their opinion such meetings are necessary, and must be called if requested by one-fourth of the Executive Committee.

A quorum for the transaction of business shall consist of not less than one-half the membership of said committee. Any member may designate in writing another person to attend any meeting in his stead and act for him at such meeting.

Sec. 2. *Association.* The Association shall hold a regular annual meeting on the _____ day of _____, at which each member association may be represented by such delegate or delegates as it may select.

Amendments. These by-laws may be amended by a majority vote of the Executive Committee at any meeting, provided, however, that such proposed amendment shall have been submitted to the members in writing at least thirty days prior to the holding of such meeting.

We, the undersigned, duly accredited and authorized representatives of associations and bureaus of coal operators in the United States, having read the foregoing Declaration of Purposes and By-laws of the National Association of Coal Operators, do hereby join each with the other in the formation and organization of The National Association of Coal Operators, hereby ratifying and affirm-

ing such Declaration of Purposes and By-Laws.

And as duly accredited and authorized representatives of such associations and bureaus, we do hereby agree that the associations and bureaus which we represent are and shall be severally and respectively bound thereby while members of said associations.

The following resolutions were adopted originally by the operators in the smokeless fields and later have been adopted by practically all coal producers in the country:

Resolved, That the Committees of Seven appointed by each State be authorized by this Convention to cooperate with the Committee on Coal Production of the Council of National Defense, for the purpose of furnishing detailed information that the Government asks for in regard to quality of coal, *et cetera*, and to suggest the proper plan for an equitable distribution of any burdens or hardships that may fall upon operator, shipper, or consumer, through the working out of that plan.

Resolved, That the operators will advise the Committee on Coal Production of the Council of National Defense as to the quality, quantity, and any other information that may be of value in making the allotments for Government coal.

Resolved, That the Committee on Coal Production check and compile these data and advise as to equitable allotment, both of various government grades and of coal to take the place in the market of coal withdrawn for the use of the Government.

Resolved, That, reserving all rights of appeal to the Court of Claims, we accept such allotments as may be made by the Cabinet Officers who are members of the Council of National Defense, or such agency or agencies as may be designated by lawful authority, respecting coal for Government use, and necessary adjustments between producers to equitably adjust the burden, and cause shippers not supplying the Government directly to supply their fair proportion of coal to government shippers, to take the place, *pro tanto*, on coal supplied to the Government."

RICE AND LIGGETT INSPECT NORTH CAROLINA TIN MINES

An examination of the tin deposits near Lincolnton, N. C., has been made by George S. Rice, chief mining engineer of the Bureau of Mines. He was accompanied on this trip by Thomas H. Liggett, a widely known mining engineer, who contributed his services gratis in response to the request being sent out by the war minerals committee, asking each geologist and engineer in the country to do his bit towards making the country more independent of foreign supplies of minerals.

THE MINING CONGRESS JOURNAL

PUBLISHED EACH MONTH BY
THE AMERICAN MINING CONGRESS.
Munsey Building. Washington, D. C.

Subscription Rate, per year.....	\$2.00
Single Copies.....	.20

Entered as Second Class Matter January 30, 1915,
at the Postoffice at Washington, D. C.

SEPTEMBER, 1917

BETTER FIRING METHODS IN NAVY SAVES GREAT WASTE OF FUEL

The battleship now steams 31 per cent farther on a ton of coal than in 1908. This is equivalent to an actual fuel saving of about 24 per cent as an average for all ships. The improvement on some of the ships must have been far in excess of these figures.

The installation of pyrometers and gas analysis apparatus on board all ships has caused the building or improving of fire-room timing devices; has caused a study of combustion and firing problems which has led to a location and elimination of nearly all the air leaks in furnaces and boiler settings, the determination of the proper amount of coal for a charge at various speeds, the correct firing interval, the correct normal opening of damper and furnace and ashpan doors when fires are not being replenished or worked; has demonstrated the saving of fuel possible by manipulating it and ashpan doors when coal is being fired.

On January 1, 1908, the average battleship knots per ton of coal fired was 2.88; on July 1, 1910, this average was 3.77, with ships 20 per cent larger on the latter date than on the former date.

Issue Crop Report

An example of enterprise is the report on crop conditions recently issued by the American Steel and Wire Company. This report covers all sections of the United States, and is a concise summing up of the situation. The document is of particular value, in that it places in one publication a résumé of general conditions. Most crop reports are issued separately, thereby making it difficult to secure a general survey of prospects.

GOVERNMENT SPECIALISTS WELL
KNOWN TO MINING MEN



Photo by Harris & Ewing

PAUL S. BLACK
Law Examiner for Bureau of Mines

Paul S. Black, who has just been appointed law examiner for the Bureau of Mines, is a native of Rome, Georgia. His early education was obtained in the public schools of Rome. Later he graduated from the University of Georgia and the Georgetown University Law School in Washington. After leaving the Georgetown Law School, he was admitted to the bar in Georgia, and later entered the Government service as law examiner for the General Land Office. For several years he served as attorney in the solicitor's office in the Interior Department, from which he was appointed to the Bureau of Mines.

During his service in the General Land Office, Mr. Black made a specialty of mining law. He organized the public land service in the Philippine Islands, and drafted a code of public land and mining laws which was adopted by the Philippine Commission.

Upon Mr. Black will devolve the determination of many important legal questions now coming before the Bureau, incident to its war work.

SUBSTITUTE OFFERED FOR ANNUAL ASSESSMENT BILL

House Committee Changes Bill Passed by Senate and Urges its Passage

When Senator Shafrroth's bill suspending, under certain conditions, the annual assessment work on mining claims reached the House Committee on Mines and Mining, after having passed the Senate, it was almost rewritten. The bill as changed by the House Committee reads as follows:

"Be it enacted, etc. That the provisions of section numbered twenty-three hundred and twenty-four of the Revised Statutes of the United States, which require that on each claim located after the tenth day of May, eighteen hundred and seventy-two, and until patent has been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made during each year, be suspended for the year eighteen hundred and ninety-four, so that no mining claim which has been regularly located and recorded as required by the local laws and mining regulations shall be subject to forfeiture for non-performance of the annual assessment for the year eighteen hundred and ninety-four: *Provided*, That the claimant or claimants of any mining location, in order to secure the benefits of this act, shall cause to be recorded in the office where the location notice or certificate is filed on or before December thirty-first, eighteen hundred and ninety-four, a notice that he or they in good faith intend to hold and work said claim: *Provided, however*, That the provisions of this act shall not apply to the State of South Dakota.

"SEC. 2. That this act shall take effect from and after its passage."

Secretary Lane, of the Interior Department, expresses his opinion of the bill as follows:

"S. J. Res. 78, as passed by the Senate, proposes to relieve owners of mining locations from performing the annual assessment work required by existing law during the existing war, provided that each such claimant shall spend each year the sum of \$100 in raising, producing, or manufacturing products for the Army, Navy, or people of the United States, or shall perform \$25 worth of labor in any beneficial occupation, or shall pay into the Treasury the sum of \$100.

"I submitted an unfavorable report upon this measure to the chairman of the Committee on Mines and Mining, House of Representatives, July 19, 1917, suggesting that the production of minerals is important, as well as the growing of agricultural crops, and that, in my opinion, the exemption from performance of assessment work should not extend further than to claims owned by officers and enlisted men of the United States Army and Navy, which exemption is provided for by an act recently passed.

"The House committee's substitute for S. J. Res. 78 is substantially to the effect that owners of mining locations shall be relieved from the performance of annual assessment work during the year 1917, upon condition that each claimant shall file in the office of the proper county recorder on or before December 31, 1917, notice of his intention to claim the benefits of the measure.

"Upon further consideration of the matter, I am inclined to favor the resolution as proposed by the House Committee on Mines and Mining. It is more simple and will be easier to administer than would the Senate resolution."

Representative Taylor, of Colorado, who is in charge of the bill in the House, comments on the need of the legislation as follows:

"The committee received a number of urgent requests from various mining sections of the Western States urging Congress to suspend the operation of the annual assessment law during the war, or at least during this year. This appeal came from nearly all portions of the mining regions of the West, and was very urgently asked for throughout Alaska. These requests are based principally upon the grounds:

"First. On account of scarcity of labor, and the actual inability to procure men to do this year's assessment work.

"Second. Because a great many prospectors and miners have enlisted in the Army and Navy, and many others are being drafted.

"Third. Because mining development, especially in the way of prospecting and new discoveries, is practically at a standstill at the present time, and the exceeding high cost of powder, steel, and other materials, makes assessment work almost prohibitive.

"Fourth. Because approximately 90 per cent of all the assessment work done is virtually dead work; that assessment work does not bring about practical development; and during these times it is looked upon as unreasonable and wrong to require any useless, or unproductive expenditure of either labor, money, or materials, and that wasted energy in any direction should not be required in these war times.

"During times of peace annual assessment work on mining claims performs a beneficial service in preventing mining ground from being held for speculative purposes and has the merit of occasionally leading to important mineral discoveries. Annual assessment work also provides labor and a livelihood to a small but deserving class of pioneer people. But it is thoroughly well known throughout the mining sections of the West that to a very large extent annual assessment work is to all practical extents and purposes an economical loss and utter waste of money, labor, and material.

"The general custom for many years throughout many of the mining sections of the West has been to estimate mining work

at \$10 a foot in sinking shafts or driving tunnels, and that the extension of a tunnel of the ordinary size 10 feet or the sinking of a shaft the ordinary size 10 feet is an expenditure of \$100 in assessment work; and when that work is done and that expenditure is made and an affidavit thereof filed that holds the claim for another year. But it is only in rare cases where that small amount of extension work ever actually brings about any useful development or the opening up of a mine."

RESCUE WORK AT CLAY, KY., PRAISED BY OPERATOR

Says Bureau of Mines and State Mine Inspector Did Splendid Work at Recent Disaster Which Cost Lives of Sixty-Two Men.

In reply to a request from THE MINING CONGRESS JOURNAL for some facts regarding the recent explosion at Clay, Ky., C. F. Richardson, the vice-president and general manager of the West Kentucky Coal Company, says:

"Inasmuch as the State Mine Inspector has made a thorough investigation of the cause of the explosion at our No. 7 mine at Clay, Ky., as well as the Bureau of Mines, I do not feel that it would be proper for me to even suggest what might have been the cause of this explosion, and I would rather have you get the information officially from either the State Mine Inspector or the Bureau of Mines Department.

"Outside of the first reports in the press, the reports were fairly accurate for I gave out the information daily to the press and gave them the exact information as it came to us from day to day.

"The casualty list is as follows: There were 62 men that lost their lives, eight of this sixty-two died after they had been rescued and were in the hospital; there were 24 men injured, eight of whom died, leaving 16 men now recovering and two of these sixteen were seriously injured, one of whom lost an eye and the eye-sight of one of the other men is considerably impaired, but we have hopes that the eye-sight will be fully restored.

"The relief car of the Bureau of Mines, which was located in Evansville and in charge of Mr. Powell, arrived at the mine at about 12:30 p. m. The explosion took place at 7:30 a. m. We ran a special train to get this car to the mine as quickly as possible, and it gave us substantial assistance in every way, in fact I cannot express the appreciation of the West Kentucky Coal Company for the good work that was done by the relief car. The Bureau of Mines sent Mr. Parker from Pittsburgh to assist and put him in charge of the work while he was on the ground. He remained several days and finally left the work in charge of Mr. Powell. The State Mine Inspector's representatives arrived on the ground the same day of the accident and rendered sub-

stantial aid. Prof. Norwood in charge of the State Mine Inspection Bureau arrived at the mine the following day, getting there as quickly as he could on account of railroad connections, and he remained on the ground several days and also gave us every assistance that we could have possibly expected, and I cannot say too much in behalf of Prof. Norwood and his corps of inspectors, all of whom we are very much indebted to.

"We also had assistance from all of the surrounding mines. I regret that I am unable to give you the names of these men. We were offered assistance and received it from the State of Indiana. It was extremely gratifying to the West Kentucky Coal Company to have such a deep interest taken by everyone in our behalf and in the behalf of the employes of the West Kentucky Coal Company in our time of trouble, and as vice-president and general manager of the company, I never shall forget the acts of kindness that were given us by everyone, and the work that was done in the rescue of the men who were not injured, as well as those that were injured, and also in the recovery of the bodies of those that were killed.

"On account of restoring ventilation it took several days to rebuild the brattices in the mine so that the air could be carried to the face of the different entries where the bodies were found where their lives had been lost. Prof. Norwood and his corps of inspectors remained with us, as well as Mr. Powell of the Bureau of Mines, until this work was completed."

WELBORN ISSUES STATEMENT CONCERNING STRIKE SITUATION

A striking statement has been issued to all employes of the Colorado Fuel and Iron Company by its president, J. F. Welborn. It reads, in full, as follows:

"To All Coal Mine Employes:

"The interests of this company and all of its employes, as well as the interests of the state and nation, have been seriously threatened by a proposed strike by the United Mine Workers of America, and it is important that every employee should fully understand the situation.

"The Industrial Commission of Colorado, on June 29, advised me that notice had been received from James F. Moran, president of District 15, United Mine Workers of America, threatening a strike in all Colorado Fuel and Iron Company coal mines on August 1, 'unless the present grievances can be adjusted before that time.'

"I immediately replied to the commission, offering to adjust any complaints, and urging the commission to secure a list of the grievances referred to by Mr. Moran, as none of them had been submitted to any representative of this company.

"On July 13 I received a letter from Mr.

Moran asking for a personal conference. I immediately invited him to confer with me on the following day, which he did. In this informal conference on July 14 I refused recognition of the union, and made it perfectly clear that this question was not open for discussion. It was agreed that if our employes had any complaints not in the course of adjustment under our industrial representation plan they should be considered at a later conference with the Colorado Industrial Commission, to include some of our employees.

"This conference was later fixed by the Industrial Commission to meet at the Capitol Building on July 26. On the day set for this meeting Mr. Moran and John McLennan stated that the miners refused to meet at the State Capitol, and as a result of this refusal the conference was held at my office.

"Up to this time no list of grievances had been furnished to the Industrial Commission, although the chairman of the commission had twice written to Mr. Moran asking for such a list.

"At the conference in my office a list of alleged grievances was presented. Most of them were either trivial or so general in their nature that they contained no specific charges of injustice and so could not be investigated. Mr. Moran himself stated that the principal demand was for recognition of the United Mine Workers of America and for an abandonment of the industrial representation plan.

"Mr. Moran proposed submission of all grievances, including demand for union recognition, to arbitration. I declined this proposition, but offered to either adjust all grievances, except the demand for recognition, through the State Industrial Commission, or to leave them to a committee composed of four employees selected by the delegates present in the conference, and four officers of the company, sitting with a member of the Industrial Commission as umpire, or to refer them to the State Industrial Commission for settlement.

"Mr. Moran declined these propositions, and stated that he was not willing to leave any matter to the State Industrial Commission, and that he was not willing to discuss further adjustment of grievances unless the demand for recognition of the union was considered. He and his associates abruptly abandoned the conference, refusing to continue with a discussion of the grievances that had been submitted, although urged by me to do so.

"I stated the following reasons for refusal to recognize the United Mine Workers' organization:

"1. Such recognition would mean at least partial abandonment of the industrial representation plan and agreement, which were adopted by both employes and the company, and which are proving satisfactory to the company and to most of its employees.

"2. An agreement with the United Mine Workers of America would apply to only a portion of the employes, while the present agreement is with all employes.

"3. Such an agreement would be unfair to that large body of employes who prefer not to join the union, many of whom have sought employment with this company to avoid working under union conditions, and who have a right to expect that the company will live up to the agreement now in force.

"4. While the company stands ready to promptly consider and adjust all grievances, or to leave their settlement to the State Industrial Commission, it agrees with the position taken by the Council of National Defense that the standards which have been established should not be changed during this war, when coal production is so vital to the interests of the nation, and it believes that its employes will agree with the statement of Secretary of Labor Wilson, quoted below, and which actually describes the condition in Colorado Fuel and Iron Company coal camps:

"If you can get a condition where efforts to organize the workers are not interfered with, and where a scale of wages is recognized that maintains the present standard of living, it occurs to me that for the time being no stoppage of work should take place for the purpose of forcing recognition of the union."

"The Colorado Fuel and Iron Company will continue to operate under the industrial representation plan and agreement, which it believes have been satisfactory to a large majority of its employes, in spite of the persistent hostility of union officials and organizers, who have had free access to our camps. The officers stand ready at any time to adjust grievances by the methods prescribed in this plan, which provides for final appeal in every case to the State Industrial Commission.

"The company is earnestly striving to protect and improve the interests of its employes. Its loyalty to them cannot be questioned, and it naturally expects equal loyalty on the part of the employes toward the company and the mutual interests of both company and employes, as outlined in the industrial representation plan. In view of the present emergency, I agreed to this unusual conference for the adjustment of grievances, but shall expect that hereafter all grievances will be taken up through the regular channels provided in the plan.

"If the United Mine Workers of America insist upon calling a strike, it will be on the sole issue of union recognition, which will not be granted. Such action would be in direct defiance of the advice of Secretary of Labor Wilson, and I confidently believe that the larger portion of our employes would refuse to leave their work.

"As I have already stated to the Colorado Industrial Commission, 'unless, contrary to my belief, there are serious grievances as to either wages or working or living conditions which the company officials have refused to fairly adjust, it would certainly be little short of treason to attempt to precipitate a strike among coal miners at this critical time in the history of our country.'

VOLUNTEERS IN COOPERATIVE SERVICE

The 1917 Membership Committee, Dr. Henry Mace Payne, Chairman, has been busy. The work of the American Mining Congress has been growing steadily and surely. Each year has seen the affiliation of a larger number of the nation's most prominent mining men, representing every branch of the industry. Below is given a list of those who have recently joined the "ranks of cooperation." These men represent three of the largest industries in the world—coal, iron and steel, and oil.

MINNESOTA

DULUTH

W. J. Oleott
M. W. Alworth
James D. Ireland
R. M. Sellwood
A. M. Chisholm
D. B. McDonald
William Wearne
B. M. Pattison
G. A. St. Clair
The Shawmut Company
G. B. Hawkins
P. H. Nelson
J. H. Hearing
W. W. Walker
Pentecost Mitchell
W. W. J. Croze
Edward J. Maney
Frank Adams
J. S. Washburn
Clement K. Quinn
Walter B. Congdon
H. C. Dudley
John H. McLean
David H. Williams
Dr. Dana C. Rood
Francis J. Webb
William G. La Rue
L. Freimuth
John A. Savage
Robert B. Whiteside
C. H. Munger
Duluth Boiler Works
J. S. Lutes

IRONTON

Hill Mines Co.
J. Wilbur Van Evera
A. A. Mackay

IRON MOUNTAIN

G. A. Richards

CROSBY

Leonard C. David
Thomas Turnbull

IRON RIVER

E. C. Bowers
Rudolph Ericson
D. H. Campbell
James S. Wall

RIVERTON

Frank Hutchinson
M. W. Feard

MISCELLANEOUS

Benj. C. Neely, Crystal Falls, Mich.
A. Y. Peterson, Chisholm, Minn.
W. J. West, Virginia, Minn.
Charles W. Potts, Deerwood, Minn.

MINNEAPOLIS

George P. Douglas
Fred B. Snyder

John S. Pillsbury
Charles S. Pillsbury
C. C. Prindle
Frank M. Warren
S. Pennington
Charles H. Robinson
R. M. Bennett
Alfred F. Pillsbury
F. A. Chamberlain
Franklin W. Merritt
George H. Warren

PENNSYLVANIA

PHILADELPHIA

William J. Faux, 6024 Wayne Avenue
H. H. Lineaweaer & Co., Inc., West End
Trust Building
Westmoreland Coal Co., S. P. Hutchinson,
222 S. 3d St.
Madeira Hill & Co., North American Building
J. S. Wentz Company, Land Title Building

WILKES-BARRE

E. J. Newbaker
John M. Humphries
George F. Lee
Douglas Bunting
C. F. Huber
Robert A. Quinn
Carleton C. Jones
S. T. Nicholson

SCRANTON

William W. Ingles
William L. Allen
Cadwallader Evans, Jr.

HAZLETON

W. H. Davies
J. Elmer Jones

MISCELLANEOUS

W. T. Payne, Kingston
E. H. Suender, Frackville
E. S. Stackhouse, Shickshinny
James Archibald, Pottsville
G. B. Markle Company, Jeddoh
T. M. Dodson, Bethlehem

CALIFORNIA

SAN FRANCISCO

Fletcher Hamilton
Honolulu Consolidated Oil Company
F. B. Henderson
Arthur F. L. Bell
Universal Oil Company
A. F. Morrison
R. P. Schwerin
A. L. Well
General Petroleum Company

LOS ANGELES

Kern River Oilfields of California, Ltd.
American Trona Corporation
R. E. Maynard
F. Chappellet
Lionel T. Barneson
Union Oil Company of California
Andrews, Toland & Andrews
W. B. Scott
Wm. Z. McDonald
Trojan Oil Company

BAKERSFIELD

W. J. Schultz
H. I. Tupman
W. H. Hill
C. A. Barlow
Alex. Wark

MARICOPA

Angus J. Crites

GRASS VALLEY

North Star Mines Company

COLORADO**DENVER**

George L. Nye
Max Schott
George L. Felt
Stanley M. Walker
Federal Exploration Co.
Ruth Lund A. M. Co.

COLORADO SPRINGS**George M. Taylor****TEXAS****HOUSTON****Producers Oil Company****ILLINOIS****Carroll Miller, Aurora****OKLAHOMA****E. V. Crowell, Wann****WASHINGTON****Central Coal Company, Seattle****NEW YORK CITY****Felix A. Vogel****OHIO****S. M. Dunbar, Steubenville****COAL MOVEMENT SHOWS****BIG INCREASE OVER 1916**

Total of 129,721 More Cars Moved in July of This Year Than in Corresponding Month of Last Year.

Reports just received by the Railroads' War Board show that the railroads carried 129,721 more carloads of bituminous coal from the mines in July this year than during July, 1916.

This increase, which amounts to 20.4 per cent, makes available for consumption 6,486,000 tons of coal in excess of the amount that would have been available had the railroads merely duplicated their July, 1916, performance. Through cooperative effort, however, and by giving preference to the movement of coal, the roads that handle the bituminous product loaded 764,965 cars last month, as against 635,244 cars in July, 1916.

The first problem to which the Railroads' War Board addressed itself, after being appointed to operate the railroads of the United States as a single transportation unit, was that of increasing the movement of coal and iron ore.

The results so far achieved reflect great credit upon the effectiveness with which the railroads have addressed themselves to their task. The fact should not be overlooked, however, that the country this winter faces greater demands for coal and other traffic than ever before in its history, and the railroads are now working might and main in

the interest of national efficiency and welfare to utilize effectively every faculty they possess.

The railroads achieved an increase in their average daily loading of bituminous coal in July this year over the average amount loaded in June this year, loading an average of 30,599 cars a day in July, as compared with 30,059 cars in June. There was an increase in the average daily loading in all districts east of the Mississippi, and an actual increase in the number of cars loaded in July this year compared with the month previous in the low volatile fields of Pennsylvania, Maryland, West Virginia, and eastern Kentucky and the high volatile coal fields of West Virginia.

The most notable increase in the total shipments in July this year as compared with July, 1916, occurred in Illinois, Indiana, and western Kentucky. It amounted to 84 per cent.

The total increase in the amount of bituminous coal handled by the railroads for the months of April, May, June, and July this year over the same months last year amounts to 578,536 cars, or approximately 28,886,000 tons. This is 25.10 per cent more than the amount handled for these four months in 1916, and is indicative of the increased efficiency shown by the railroads since they voluntarily agreed to merge competitive activities and coordinate their operations in a single continental railway system in order to produce a maximum of national transportation efficiency during the period of the war.

WEEKLY FIGURES ON COKE PRODUCTION TO BE ISSUED

No study of coal production, possible and attained, could be complete which did not embrace the operations of coke plants. Consequently the Survey has begun a weekly analysis of the output of the great beehive coke region of Central Pennsylvania, including the Connellsburg, Greensburg, and Latrobe areas. Reports of shipments and reasons for failure to attain maximum output, received by the Geological Survey from seventy-two beehive coke operators, are summarized. The base used in calculating percentage of capacity attained in the great majority of cases is the railroad's rating of the mine, which in the region in question is in excess of the capacity of the mine possible with its present labor force. The figures are therefore not comparable with those published for coal mines which use as a base the output when the mine runs full-time with the force of laborers at the moment available.—*From the Geological Survey's Weekly Coal Statement.*

T. L. Lewis, secretary of the Splint and Gas Coal Association, Charleston, W. Va., spent several days in Washington and New York last month.

U. S. PLACER MINING LAWS AS APPLIED TO OIL

BY JOSEPH W. THOMPSON

The original United States Mining Statutes recognized existing distinctions between vein or lode claims and placer claims. The provision as originally adopted, and as it still exists, is to the effect that claims usually called "placers" include "all forms of deposits excepting veins of quartz or other rock in place." Vein or lode claims include "veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits." By judicial construction, the exception of veins of quartz, or other rock in place in Section 2329, include deposits of any mineral substances found as "rock in place."

Six minerals only are mentioned by name in the provisions covering both lode and placer locations; but neither lode nor placer locations are limited to the minerals named.³ The real distinction under the different sections of the statutes, as judicially construed, is in the form of the deposit and not the name or character of the mineral. It is a geological fact that the mineral substances named, perhaps without exception, as well as others known or since discovered, may be found either as rock in place or in the form of placer deposits. The sequel has abundantly demonstrated the wisdom of the law makers in not attempting to name the particular minerals that can be located either as lode or placer locations. Both the lode and the placer provisions have already been extended and held to include an infinite variety of mineral substances, and the provisions are broad enough to include every substance that may yet be discovered that scientists and geologists shall name as minerals.⁴

MINING STATUTES APPLY TO OIL LANDS

On August 27, 1896, the General Land Office refused a patent for an oil location on the theory that lands containing petroleum did not fall within the contemplation of the mining laws.⁵ But on November 6, 1897, the Land Office reversed its decision and held that lands chiefly valuable for their petroleum deposits were locatable as placer claims under the mining laws.⁶

After the first decision and to cure the ill, the Congress on February 11, 1897,⁷ by express enactment provided "that lands containing

petroleum or other mineral oil and chiefly valuable therefor," are locatable under the placer mining laws. The second decision of the Land Office was based upon the principle that oil is, in fact, a mineral and within the meaning of the original mining statutes, and the Act of February 11, 1897, seemed to have no influence whatever on the decision. As the law now stands both on principle and on express statutory provision, lands chiefly valuable for their oil content may be located, held and patented as placer claims.

PETROLEUM STATUTE—

CONSTRUCTION

The oil location statute of February 11, 1897,⁸ above referred to is peculiar in its wording with reference to lands containing petroleum. This Act changes as to these lands the statutory rule that has obtained since the adoption of the original United States Mining Statutes of 1866. Prior to this Act locations of all kinds were made for "valuable mineral deposits in the public lands." The provision of this Act is to the effect that competent persons may locate "lands containing petroleum or other mineral oils, and chiefly valuable therefor." Under the old statute, the location was made with reference to the value of the mineral deposit, without regard to the character or value of the land. Under this statute oil locations must be made on lands that are chiefly valuable for their oil content. The value given the land by the oil therein is the determining factor that subjects it to location under this act. The value of land for the oil contained must exceed its value for any or all other purposes. Under the former mining statute the value of the deposits is the criterion, but under this statute, it is the value of the land given it by the oil deposit.

This petroleum statute is remedial and was intended to promote oil locations. The lawmakers evidently had in mind the well-known fact that oil may be discovered where the surface of the land is level and fertile and valuable for surface purposes; they knew, too, that oil is discovered in mountainous districts and in regions where the land is of little or no value for surface purposes. It was not intended that lands valuable for cultivation or grazing and general agricultural purposes

³United States Revised Statutes, Section 2329.

⁴United States Revised Statutes, Section 2320.

⁵San Francisco Chemical Co. v. Duffield, 201 Federal 830;

Duffield v. San Francisco Chemical Co., 205 Federal 480.

⁶United States Mining Statutes Annotated, pp. 18, 518, 689.

⁷Union Oil Co., *In re*, 23 Land Decisions, 222.

⁸Union Oil Co., *In re*, 25 Land Decisions, 351.

⁹Statutes at Large 526, Petroleum Act.

¹⁰Statutes at Large 526.

should be acquired and held under patent for oil purposes, unless the lands were chiefly valuable for such purpose. The same rule must be applied to the rugged lands of the mountainous districts and before these can be located, it need only be made to appear that they are chiefly valuable for oil.

This peculiar feature of this petroleum statute has a direct bearing on the question of the sufficiency of a discovery of oil to justify an oil location. Judge Bledsoe, in a recent case in reference to the wording of this statute, said: "This fact should not be lost sight of in defining what will suffice for a discovery under the oil statute." In defining discovery with reference to this feature of the petroleum statute the Judge further said: "This discovery in its broad and comprehensive sense is the doing of or the accomplishing of that thing with respect to the land sought to be appropriated which serves to impress upon it the quality of being land which is open to appropriation or exploration in the manner and pursuant to the law sought to be made use of."¹⁰ The logic of this statute and of this holding is that a comparative greater oil content must be established as a question of discovery where the land is valuable for other purposes, than where the land is not valuable for any purpose. Thus a discovery of petroleum in lands in Oklahoma or California, worth \$100 per acre for agricultural purposes, must establish with reasonable probability at least that the land is more valuable for the oil content, whereas, a slight discovery or the presence of a small quantity or flow of oil might be sufficient to establish the oil value of land in a region where the surface value is slight or nil. If, as suggested, this statute was intended to promote oil locations, it was certainly not the design to require proof of discovery of a profitable yielding oil reservoir in lands otherwise worthless.

DISCOVERY AS BASIS OF RIGHT

The rule under all mining statutes is that a discovery of mineral is essential to a mining location. No valid location can be made without a discovery of mineral. The theory of the United States statutes is that discovery and location are a unit. The requirements of the statutes on this subject are mandatory. The object of the law in requiring the discovery to precede a location is to insure good faith on the part of the locator and to prevent frauds upon the Government by persons attempting to acquire patents to lands not min-

eral in character. Discovery is said to be the initial act upon which all mining rights are based and is the source of title to mining claims located upon the public domain. Ordinarily no rights can be acquired by a location made without a discovery of minerals within the meaning of the statute and discovery is as essential to any right or title to a mining claim as the location itself. These principles apply alike to lode and placer claims and the requirement of discovery has been expressly applied to lands containing petroleum and other oil.¹¹

DISCOVERY IN LODE AND PLACER CLAIMS—DISTINCTION

A distinction is made as to the requirement between discovery or the sufficiency of discovery in a lode claim and in a placer claim. The strictness as to proof of discovery in lode claims is not required in placer claims.¹² In placer locations the discovery is sufficient if it gives reasonable evidence of the fact that the ground is valuable for such mining.¹³ One reason for this rule is found in the fact that placer mining may be carried on profitably with far less expense than lode mining. This rule was adopted with reference to the mining of gold in placer mines as compared with lode mining. The same distinction applies with equal force to the mining of an oil claim as compared with the mining of a lode claim. The expense of sinking a hole six or eight inches in diameter a few hundred or one or two thousand feet in depth and the subsequent pumping of oil when discovered is inconsiderable as compared with the initial investment in mining machinery and the continuous work of mining and milling the ore. A discovery of sufficient value or quantity to induce a prudent mind in the expenditure of money and labor in the one case might fall far short of justifying the same prudent mind in the expenditure of money and labor in the other case. So while the rules as to discovery in lode claims are applicable to placer, yet the rule is more charitable as applied to all classes of placer locations.

SUFFICIENCY OF DISCOVERY—QUESTION OF FACT

Section 2319,¹⁴ simply provides that all valuable mineral deposits in the public lands are free and open to exploration and purchase by qualified persons. Section 2320,¹⁵ is to the effect that no location shall be made until the discovery of a vein or lode within the limits

¹⁰United States v. McCutcheon, 238 Federal 575, p. 584.

¹¹Bay v. Oklahoma Southern Gas, Oil and Mining Co., 13 Okla. 425, p. 436; Nevada Sierra Oil Co. v. Home Oil Co., 98 Federal 673; United States v. McCutcheon, 238 Federal 575, p. 590.

¹²Cook v. Johnson, 3 Alaska 506, p. 541.

¹³Chrisman v. Miller, 197 U. S. 313, p. 323; Steele v. Tanana Mines R. Co., 148 Federal 678, p. 679.

¹⁴United States Revised Statutes.

¹⁵United States Revised Statutes.

of the claim located. But what is necessary to constitute a discovery of mineral is not prescribed by statute and there is no statutory declaration as to the extent of the value of the mineral deposits that may be appropriated, or of the vein or lode that may be located.¹⁸ The statute leaves it with the single expression: "All valuable mineral deposits." The question as to the sufficiency of the value of any given mineral deposit to meet the statutory requirement of discovery is a question of fact under or in connection with varying circumstances. The contested cases universally concede that discovery is a question of fact. The law does not contemplate that the locator shall show a paying mine at the time he makes his location.¹⁹ A prospector is not prohibited from making a valid location unless and until he has fully demonstrated that the vein or lode or other rocky matter bearing gold or silver discovered will pay all the expenses in recovering, extracting, crushing, and reducing the ore and leave him a profit.²⁰ If proof of a discovery of a commercial value were a condition precedent to a valid location, many titles to mines that subsequently proved valuable would have failed.

WILLINGNESS TO MINE AS ELEMENT IN DISCOVERY

The human element forms an equation²¹ in the problem of the sufficiency of discovery, and the law is satisfied where minerals have been discovered sufficient in quantity to justify a person of ordinary prudence in making an expenditure of labor and money with a reasonable prospect of success in developing a valuable mine.²² Any deposit of mineral matter or indication of a vein or lode in a mineralized zone or belt with defined boundaries that a person is willing to spend his time and money to develop in expectation of finding ore may be the subject of a valid location.²³ A locator makes a discovery within the statute when he has found mineral in place in sufficient quantity to justify him in the expenditure of time and money thereon, whether the rocks assay high or low.²⁴ A vein or lode discovered in the side of a hill or mountain within well defined walls may assay but a small amount per ton as compared with the cost of extracting, removing, and milling the

ore, but the miner may have good reasons to believe from his experience and from that of others in the same mining district that the ore is liable to be richer at a greater depth than at the point of discovery, and such may be a discovery on which to base a valid location.²⁵ The sufficiency of a discovery is not made to depend alone upon the commercial value of the mineral in sight, but it answers if it is sufficient to justify a person of ordinary prudence in making an expenditure of money or labor with a reasonable prospect of success, or if a person is willing to give his time and money to develop the same in expectation of finding ore.

"Facts which are within the observation of the discoverer and which induce him to locate should be such as would justify a man of ordinary prudence, not necessarily a skilled miner, in the expenditure of his time and money in the development of the property."²⁶ The willingness alone of a locator, though a man of ordinary prudence, to expend time and money is not the test of justification, but it is equally true that there can be no justification in the absence of a willingness to rely, and of an actual reliance upon the observed conditions.²⁷ "The attitude of the discoverer himself toward the sufficiency of his discovery is a potent factor in the determination of the question as to justification."²⁸

(To be continued.)

ASHURST ARRAIGNS I. W. W. IN A 200-WORD SPEECH

Senator Ashurst of Arizona arose in his place in the Senate recently and in a few words condemned the I. W. W. organization severely. It is agreed that no more effective criticism of the organization could have been offered had Senator Ashurst spoken an hour. He said:

"Although the Senate of the United States is an unusually well-informed body of men, I find nevertheless a number of Senators are not familiar with just what the I. W. W. menace throughout the Western states means.

"With the I. W. W.'s perjury is a fine art. With this organization murder is reduced to a science, and after the I. W. W. slays its unoffending victim the accused and guilty

¹⁸Chrismen v. Miller, 197 U. S. 313, p. 321.

¹⁹Cook v. Johnson, 3 Alaska 506, p. 541; Shreve v. Copper Bell Mining Co., 11 Mont. 309, p. 343.

²⁰Book v. Justice Mining Co., 58 Federal 106, p. 124; Fox v. Myer, 20 Nev. 169, p. 185.

²¹Chrismen v. Miller, 197 U. S. 313, p. 322.

²²Cascaden v. Bartolis, 162 Federal 267, p. 268; Castle v. Womble, 19 Land Decisions 455, p. 457; Hayes

v. Lavagnino, 17 Utah 185, p. 196.

²³Migeon v. Montana, etc., R. Co., 77 Federal 249.

²⁴Book v. Justice Mining Co., 58 Federal 106, p. 124; Holdt v. Hazard, 10 Calif. App. 440.

²⁵Castle v. Womble, 19 Land Decisions 455, p. 457.

²⁶United States v. McCutcheon, 238 Federal 575, p. 589; United States v. Ohio Oil Co., 240 Federal 996, p. 1000.

²⁷Cook v. Johnson, 3 Alaska 506, p. 536; United States v. McCutcheon, 238 Federal 575, p. 590.

person frequently escapes conviction by reason of a prearranged alibi, because, as I said, the I. W. W. has reduced perjury to a fine art.

"At a later time I expect to deal with this subject and explain some of the views and activities of this treasonable organization, but this morning I will simply ask to have the secretary read at the desk a short extract from a very reliable Arizona weekly newspaper, which gives some illumination upon the activities and views of the I. W. W. I have frequently been asked what 'I. W. W.' means. It means simply, solely, and only Imperial Wilhelm's Warriors."

The article referred to by the Arizona Senator and which was read to the Senate is as follows:

"The I. W. W. menace might be easily handled and put out of existence if the Federal Government would get busy and place the arch enemy of all governments, William Haywood, behind the bars on a charge of treason in the time of war.

"Along with Haywood should go every member of the I. W. W., a special effort being made to get the big leaders first. No sympathizer of the I. W. W. propaganda should enjoy the liberty of this country only long enough to place him in jail to wait his trial for treason.

"There is no room in this country for people like Haywood, Berkman, and the female species represented by Emma Goldman. No form of government suits them, because they do not believe in governments.

"As evidence of the total depravity of the followers of Haywood, the following verse from the I. W. W. song-book is given:

"Onward, Christian soldier, rip and tear and smite;
Let the gentle Jesus bless your dynamite;
Smash the doors of every home, pretty maidens seize;
Use your might and sacred right to treat her as you please."

"This particular verse exemplifies to the fullest degree just what the I. W. W. are, what they believe in, and what they would do if they ever got in power in this or any other country."

METALLURGICAL PRACTICES IMPROVE UNDER SPUR OF WAR

G. K. Burgess, of the American Scientific Commission, Makes Interesting Observations on Visit in France.

No adequate idea of the important part mineralogy is playing in the present war can be obtained without a visit to the front and to the plants in France and England, which are supplying much of the needed war material. While the great quantities of munitions are being manufactured in this country, it is not being conducted under the same

pressure as in France and England. This is the testimony of many engineers who have had an opportunity to view the situation at close range. Dr. G. K. Burgess, in charge of the metallurgical work being done by the Bureau of Standards, who was a member of the American Scientific Commission which visited England and France immediately after the entrance of the United States into the war, made many interesting observations while on this trip. He confirms the frequently made statement that this is a metallurgical war.

The commission, of which Dr. Burgess is a member, left the United States on the first ship which sailed after a state of war was declared to exist. They were afforded every facility by the English and French governments to acquaint themselves with the technical work which is being brought to bear so effectively in the waging of this war.

Dr. Burgess was particularly impressed with the magnitude of operations. While he had kept in close touch with the situation, he was amazed at the scale on which everything is being conducted and particularly at the scope of the technical work that is being done.

"Surprising progress has been made in metallurgical practices," says Dr. Burgess. "The details of the development will be a revelation when the war is over. Under the exigencies of war metallurgy and chemistry have taken enormous strides."

Dr. Burgess was impressed particularly with the enormous development of hydro-electric plants in the French Alps. From his observation, he is convinced that the United States must produce a sounder type of ingot. In Europe the universal practice is to cast the large end up. This eliminates with certainty all piping. It is his idea that one of the most important things for the United States to do is to build up reserves of fuel and metals in France.

By establishing ministries of munitions, France and England have made invaluable additions to their chief administrative boards, Dr. Burgess thinks.

While in Europe Dr. Burgess took special note of the work being done by the scientific societies. He also familiarized himself with their practice with regard to the recruiting of scientific men. From experience the beligerents have safeguarded recruiting so as not to weaken themselves by placing their best brain power in positions of great hazard.

The general public in the United States is not familiar with the fact that Verdun was a metallurgical battle. The fact that the French were so firmly established at the point so close to the great iron producing region held by the Germans was the source of constant menace. It was to relieve this danger that the Crown Prince made his desperate effort to break the French line at this point, and also accounts for the persistency with which activities are continued on this sector of the battle front.

POOLING OF TIDEWATER COAL GREAT SUCCESS

**More than 150,000 Cars will be Released by
New Plan for Handling Shipments at At-
lantic Ports**

Bituminous coal, amounting to 36,000,000 tons a year, is being successfully pooled pending boat shipment at four Atlantic Coast ports—New York, Philadelphia, Hampton Roads and Baltimore. Previous detention at tidewater of coal pending shipment averaged five and one-half days. If this detention can be reduced to three days it is expected seven million more tons of coal will be moved with the same car equipment, or the equivalent of about 150,000 cars be released for other service. The Railroad War Board and the Committee on Coal Production of the Council of National Defense, cooperated with the railroads and the three hundred shippers who route coal via the Atlantic ports, to establish the Tidewater Coal Exchange, in Washington, which is maintained at the expense of the railroads.

The first meeting of shippers was called on May 31, by Chairman Peabody of the Committee on Coal Production, who explained that the purpose of the meeting was to formulate a definite plan similar to one already in vogue at Lake Erie ports, for pooling all tidewater coal shipments. Three of the five railroad executives who form the Railroad War Board—Rea, Elliott, Krutschmitt and Holdon, told the shippers of the necessity of some plan for pooling coal at Atlantic ports just as it is being pooled on Lake Erie. A committee of twenty-five—five from New England receivers, five from the producers of bituminous coal, five producers of anthracite and five representing vessel ownership—was appointed. This committee, with Mr. Elliott acting as chairman, accepted the report of committee urging that a tidewater pool be established and that a Commissioner be selected with central offices in Washington and that four Deputy Commissioners be selected for the ports of New York, Philadelphia, Baltimore and Hampton Roads. The election of Rembrandt Peale as Commissioner then was announced, and the selection of the Deputy Commissioners followed.

Pooling coal entails sacrifice by many operators. Coal shipments are being standardized, so that instead of there being 1166 different classifications, each of which requires considerable switching when a boat for any particular kind arrives coal now is classified into only 45 kinds. Coal of like kinds, after careful inspection, is being pooled; that is, run on one track so that, when a boat arrives, to take a cargo of 100 cars, for instance, of a particular classification, from Baltimore to Boston, the first 100 cars of that classification are run on board and dumped. Both cars and ships are thus

more quickly utilized. The cars are emptied and turned to other uses and the vessels do not have to wait while cars of a certain consignment are extricated from a crowded switchyard.

The Tidewater Coal Exchange is like a bank or clearing house. All tidewater coal is consigned to it and each shipper reports shipments to it daily so that whenever his vessel or barge arrives at Baltimore, or any of the three other ports, he can authorize the Deputy Commissioner in charge to load coal from any track to the extent of his credit, and the Commissioner, if he desires to expedite the movement of the vessel, can authorize the movement of an equivalent of the shipper's coal that is in transit. It is possible for one shipper to transfer credit in coal to another in writing. The rules also provide for careful inspection, daily reports, the adjustment of differences, embargoes on the shipments of any member not providing vessel and for pro-rate demurrage.

The Deputy Commissioners are: For Baltimore, G. F. Malone, formerly superintendent of car service, Baltimore & Ohio Railroad; for New York, J. W. Searles, formerly general sales manager of the Pennsylvania Coal & Coke Corporation; for Hampton Roads, J. W. Howe, formerly coal freight agent, Chesapeake & Ohio Railroad; and for Philadelphia, Harry Boulton, vice president of the Association of Bituminous Coal Operators of Central Pennsylvania.

IRON ORE PRODUCTION EXCEEDS ALL RECORDS

**Increase in 1916 Over Big Production of 1915
Was 40 Per Cent, While Increase in Value
Was 80 Per Cent.**

The iron ore mined in the United States in 1916 reached a total of 75,167,672 gross tons, the greatest annual output ever made. The shipments from the mines in 1916 were 77,870,553 gross tons, valued at \$181,902,277. The quantity mined in 1916 was more than 19,600,000 tons greater than that mined in 1915. The increases in quantity and in value of iron ore shipped in 1916 amounted to 40 and 80 per cent, respectively. The average value per ton at the mines in 1916 was \$2.34, as against \$1.83 in 1915. These figures, which were compiled under the direction of E. F. Burchard, of the United States Geological Survey, include for 1916 only iron ore containing less than 5 per cent of manganese.

IRON MINING BY STATES

Iron ore was mined in twenty-four states in 1916 and twenty-three in 1915. Two of these states, Nevada and Utah, produced iron ore for metallurgic flux only; part of the output of Colorado and New Mexico was used for smelter flux and part for pig iron and ferro alloys; Michigan and Minnesota

report the production of some ore used in open-hearth furnaces to "reduce carbon," and North Carolina reports the production of magnetite ore, used in a pudding furnace at Knoxville, Tenn.; the remaining states produced iron ore for use in blast furnaces only, except small quantities used for paint from Michigan, New York, and Wisconsin. Minnesota, Michigan, and Alabama, which have for many years produced the largest quantities of iron ore, occupied in 1916 their accustomed places.

LAKE SUPERIOR RANGES

All the ranges in the Lake Superior district mined a larger quantity of iron ore in 1916 than in 1915, and the largest increases were in the Gogebic and Menominee ranges—54 and 43 per cent, respectively. The output of the Cuyuna Range exceeded 1,500,000 tons for the first time.

LARGEST IRON ORE MINES

Twelve mines in the United States produced more than 1,000,000 tons of iron ore each in 1916, five more than in 1915. First place in 1916 was held by the Hull-Rust mine, at Hibbing, Minn.; second place by the Red Mountain group, near Bessemer, Ala.; third place by the Fayal mine, at Eveleth, Minn., and fourth place by the Mahoning mine, at Hibbing, Minn. The production of these mines in 1916 was, respectively, 7,658,201, 2,899,588, 2,252,008, and 2,215,788 tons. The increase at the Hull-Rust mine was 232 per cent, making the production of this one mine more than one-tenth of all the ore mined in 1916. These records illustrate the rapidity with which the rate of output of mines in the Lake Superior district may be increased. None but open-pit mines could be made to respond to demand to such a degree.

PIG IRON

The production of pig iron, including ferro alloys, was 39,434,797 gross tons in 1916, compared with 29,916,213 gross tons in 1915, an increase of 32 per cent, according to figures published by the American Iron and Steel Institute, February 24, 1917. The pig iron, exclusive of ferro alloys, sold or used in 1916, according to reports of producers to the United States Geological Survey, amounted to 39,126,324 gross tons, valued at \$663,478,118, compared with 30,384,486 gross tons, valued at \$401,409,604, in 1915, a gain of 29 per cent in quantity and 65 per cent in value. The average price per ton at furnaces in 1916, as reported to the Survey, was \$16.96, compared with \$13.21 in 1915, an increase of 28 per cent. According to market quotations, the increase from January to December, 1916, in the prices of standard grades of pig iron at the large iron centers ranged between 45 and 68 per cent, but this increase was confined almost entirely to the last two or three months of the year, and does not affect the average so greatly.

FURTHER HEARINGS ON OIL LEASING BILL ARE ASKED

Max Ball Declares Stress Has Been Placed on Remedial Provisions to the Exclusion of Other Effects of the Legislation

The three bills affecting oil lands (S. 45, S. 2012, and H. R. 3232) have in common certain serious weaknesses, Max Ball, former law officer of the Bureau of Mines believes. In this connection he says:

"The Committee on Public Lands has devoted practically unlimited time to those interested in remedial legislation of one sort and another. I cannot believe that even at this late date it is intended to refuse a hearing to those interested in the development of the great body of oil-bearing public lands and in preventing the waste of a mineral of such military and economic importance.

"There are certain features in the Walsh bill that, if enacted into law, would be almost certain to bring about enormous waste of oil and gas—a result the public is vitally interested in preventing. These same features make the bill equally undesirable from the standpoint of the oil industry, a considerable part of which is ready, if given a fair opportunity, to spend large sums of money in the Rocky Mountain region in the hope of developing fields to rival Salt Creek and making the production of the Mountain States a large factor in the prosecution of the war. There are, I am sure, many representatives, both of the public's point of view and of the point of view of the oil industry, who would now be glad to appear before the Committee if given the opportunity to do so, with the assurance that the merits of the bill rather than proposed amendments to it were to be discussed.

"I recognize that these people have for the past four or five years had opportunity to be heard and have not availed themselves of it. This has been due to two causes. First the oil journals and technical press have treated the proposed legislation as though it involved only remedial features, and the oil industry has not until very recently realized that general legislation affecting the public domain was under consideration. Second, some of the closest students of the situation are in the Government service and are therefore prevented from volunteering their opinions regarding legislation that has received the approval of the head of the Department. The views of these men can be obtained only by calling for them in such a way as to insure the men giving them against official displeasure. Their views would, however, be invaluable to the Committee, as would the views of a large number of men in the oil industry whose public spirit can not be doubted and who would undoubtedly ac-

cept the Committee's invitation to review the proposed legislation. Thus the Committee would be able to report a bill founded on the advice of men of long familiarity with oil field conditions, men interested in the production of a maximum amount of oil at a minimum cost and with a minimum of waste.

"As to the matter of acreage, I suggest consideration of the paper on 'Adequate Acreage and Oil Conservation,' read before the American Mining Congress, last November, and of the discussion that followed. The arguments against a fixed term of lease are similar—that it promotes waste by forcing rapid rather than careful development. It is worth nothing that most commercial leases are written for a certain period 'and as long thereafter as oil or gas may be produced therefrom.'

"As chairman of the Oil Board of the Geological Survey, and later as an engineer and law officer of the Bureau of Mines, I have given several years study to problems involved in oil land legislation. I can suggest the names of a number of men, both in the Government service and out, who are familiar with these problems and who might profitably be asked to appear in order that the Committee may be as well advised regarding the general provisions of the bill as regarding the remedial features.

"The hearings so far held, both in this and the two preceding Congresses, have been devoted almost wholly to proposed relief and remedial provisions, with very little discussion of the provisions affecting the great body of the public domain. This is easily understood, since those desiring relief legislation have financial interest in the subject matter much more immediate and pressing than those best qualified to advise regarding the terms and conditions of future leases. I am convinced, however, that there are a number of men familiar with the operation and effects of various leading provisions who would appear before the Committee if requested and whose testimony would be of great value.

"The general provisions of the bill apply to an area so much greater than the relief provisions, and are of so much greater importance to the public and to America's supremacy in the petroleum industry that I hope the hearings will not be closed until these provisions have received an exhaustive discussion."

Labor Legislation

In summing up labor legislation in 1916, the Department of Labor features the Act of Congress establishing eight hours as a standard work day for employees operating trains on steam railroads in interstate commerce. Next to this is placed the federal statute excluding from interstate traffic the products of the labor of children employed in mines or quarries under the age of sixteen.

EMPLOYERS' ASSOCIATION OF MONTANA DOING GOOD WORK

Agreement Effectuated at Great Falls Regarded as a Good Example to Be Followed.

Encouraging progress is being made by the State Employers' Association of Montana. While the organization is concerned primarily with the labor situation, it is finding many other matters to which it is devoting its attention in the common good.

An example of the type of agreement being effected by the Employers' Association of Montana is as follows:

The agreement entered into between Great Falls Branch of the Employers' Association of Montana and the Cascade County Trades and Labor Assembly, is of national interest. It is reproduced in full as follows:

It is hereby agreed between Great Falls Branch of the Montana Employers' Association and the Cascade County Trades and Labor Assembly:

Hereafter all grievances and disputes arising between employers belonging to the Great Falls Branch of the Montana Employers' Association of the State of Montana and the employees belonging to the union composing the Cascade County Trades and Labor Assembly shall be referred to a committee of an equal number of men from both parties hereto for an adjustment.

It is further agreed that no cessation of work, boycotts, banners or action of a similar nature shall be taken by any union or employee on account of jurisdictional disputes or differences among the unions themselves. It is further provided that the craft or union holding jurisdiction over the class of work or over the men involved prior to the dispute shall continue to hold jurisdiction until the two arbitration boards shall have rendered a decision.

Third—A standing grievance committee shall be elected composed of twelve (12) men, six (6) to be elected from each of the parties hereto and to hold office until April 10, 1918, and all grievances, differences and disputes which shall hereafter arise between employers who shall be members of the party of the first part herein and their union employees, shall be submitted to the said grievance committee for consideration and adjustment before any strike, lockout, boycott, secondary boycott or similar action shall be declared or taken by any member of either party hereto, and before any person, place or business shall be bannered or picketed.

It being further understood that after any difference, dispute or controversy shall have been submitted to said grievance committee, that said grievance committee shall be given ten days opportunity to thoroughly con-

sider and adjust such disputes or controversy, before any action above referred to in the way of a strike, boycott, secondary boycott, lockout, banner or picket shall be taken. It is further provided, however, in case of a tie vote a committee of three shall be elected as follows: Union committee to elect one, and the Employers' Association committee to elect one man, those two to choose a third man, and these three to arbitrate and decide the tie, and their decision shall be final and binding upon all parties hereto. Provided, however, that the election of the committee of three and the deliberations shall be complete within forty-eight hours from the time of the deadlock. And be it further provided, that in case of the inability of the committee of three to reach an agreement within the provided time, the original committee of twelve shall have power to extend them further time.

The parties hereto shall enter into agreements governing the working conditions and wage scales and such agreements shall be acted upon and ratified by the particular unions and the particular branch of the said Employers' Association with reference to which the agreements are made and when so ratified the agreements shall be binding upon all members of the unions and upon all members of the Employers' Association affected thereby. And the parties hereto will pledge their support in securing the complete enforcement of such agreements.

The general agreement to be entered into shall remain in full force and effect for an additional year after January 1, 1918, unless one of the parties hereto shall, not less than thirty (30) days prior to January 1, 1918, give notice to the other party of its desire and intention not to so continue said agreement.

This agreement shall be in full force and effect upon being signed by the president, vice-president and secretary of the contracting parties, and their corporate seal attached thereto.

Note.—The above agreement may be termed a model arrangement for the peaceful adjustment of differences arising between employers and employees, and it marks a new epoch in the industrial life of Great Falls, Montana, a city heretofore handicapped by continual strife between labor and capital. When every community in this state shall have adopted such a plan for the settlement of labor troubles, it can well be said that Montana has shown the way for a practical plan of solving the biggest internal problem in our national life.

Government Using Fabrikoid

Investigations prove that high-grade leather substitutes are taking the place of leather in many instances. Only recently the Government adopted fabrikoid as its standard for ship upholstery and the same product has been used in the binding of Government books for some time.

CONSERVATION OF IRON HELD TO BE VITAL

Geological Survey Calls Attention to Methods Which Will Prolong Life of These Supplies

The conservation of the iron-ore supplies of the United States, the discovery of new supplies, and the development of methods for rendering supplies of low-grade ore available are vital to the maintenance of the industrial independence and supremacy of this country, notwithstanding the apparent abundance of the supplies at present available, for, as has been pointed out, the reserves of high-grade iron ore now convenient of access are rapidly becoming depleted.

Certain important factors that will aid in prolonging the life of the iron-ore reserves of the United States may be summarized as follows:

1. The steady accretion to the permanent supply of metal and the consequent reduction in rate of increase of production (waste of war not taken into consideration).

2. The adoption of methods of conservation of ore and metal.

3. The increase in imports of ore from Cuba and South America, whose deposits must logically be regarded as a portion of the immediately available reserve, as such ores can be used most profitably and economically in the United States.

4. The further discovery of iron-ore deposits in the Western Hemisphere.

5. The possibility of metallurgic improvements that may enable pig iron to be derived economically from low-grade ores, and the solution of metallurgic problems, including that involving the utilization of titaniferous iron ores, of which there are large deposits not now available.

6. The increase in the price of pig iron, which will bring lower grades of iron ore into the market, thus vastly increasing the tonnage of reserves available.

PRINCIPAL FIRMS IN U. S. THAT USE IRON PYRITES

Owing to the interest in the pyrite situation the following list of principal firms in the United States using pyrites is published:

Acme Mfg. Co., Wilmington, N. C.; Alabama Chemical Co., Montgomery, Ala.; American Agricultural Chemical Co., Montgomery, Ala., with plants at Charleston, S. C., Columbia, S. C.; Boston, Mass., Alexandria, Va., Baltimore, Md., Buffalo, N. Y., Carteret, N. J., Cincinnati, Ohio, Cleveland, Ohio, Detroit, Mich., Elizabethport, N. J., Newark, N. J., Pensacola, Fla., Savannah, Ga., Wilmington, N. C.; American Alkali & Acid Co., Bradford, Pa.; Anderson Phosphate & Chemical Co., Anderson, S. C.; Armour Fertilizer Company, Atlanta, Ga., with plants at Chrome, N. J., Jacksonville, Fla., Nashville, Tenn.,

New Orleans, La.; Avery Chemical Co., Lowell, Mass.; Barker Chem. Co., Dunellen, Fla.; Bergenport Chem. Works, Bayonne, N. J.; Blackshear Manufacturing Co., Blackshear, Ga.; Bower Chemical Co., Philadelphia, Pa.; Butterworth & Judson, Newark, N. J.; Buffalo Fertilizer Works, Buffalo, N. Y.; Buagh Chemical Co., Baltimore, Md.; Caroleigh Fertilizer Works, Raleigh, N. C.; Cleveland Cliffs Mfg. Co., Marquette, Mich.; Commercial Acid Co., St. Louis, Mo.; Consolidated Rendering Co., Boston, Mass.; Contact Process Co., Buffalo, N. Y.; Cotton States Seed & Fertilizer Co., Macon, Ga.; Davison Chemical Co., Baltimore, Md.; Detroit Chemical Works, Detroit, Mich.; Empire State Chemical Co., Athens, Ga.; Etiwan Fertilizer Co., Charleston, S. C.; Eureka Fertilizer Co., Perryville, Md.; Farmers Fertilizer Co., Columbus, Ohio; Federal Chemical Co., Nashville, Tenn.; Free State Fertilizer Co., Carrollton, Ga.; Furman Farm Imp. Co., Atlanta, Ga.; General Chemical Co., with plants at New York City, Bayonne, N. J., Buffalo, N. Y., Cleveland, Ohio, Fairfield, Conn., Newell, Pa., Pulaski, Va., Chicago, Ill., Marcus Hook, Pa.; Georgia Fert. & Oil Co., Valdosta, Ga.; Grasselli Chemical Co., with plants at Cleveland, Ohio, Chicago, Ill., Tremley, N. J., Pittsburgh, Pa., Grasselli, Ala.; Griffith & Boyd, Baltimore, Md.; Gulfport Fert. Co., Gulfport, Miss.; Hampton Fertilizer Co., Hampton, Ga.; Harrison Bros., Philadelphia; Home Guano Co., Dothan, Ala.; Home Mixture Guano Co., Columbus, Ga.; International Agricultural Chemical Co., Macon, Ga.; Jackson Fertilizer Co., Jackson, Miss.; Jerecki Chemical Co., with plants at Sandusky, Ohio, Cleveland, Ohio, Jefferson Fertilizer Co., Birmingham, Ala.; Kalbfleisch Chemical Co., New York; Lancaster Chemical Co., Lancaster, Pa.; Chea, Lenning & Co., Philadelphia, Pa.; Mandeville Mills, Carrollton, Ga.; Martin White & Co., New York; Maybank Fertilizer Co., Charleston, S. C.; Meridian Fertilizer Factory, Meridian, Miss., & Hattiesburg, Miss.; Merrimac Chemical Co., Boston, Mass.; Cochrane Chemical Co., Boston, Mass.; Morris Fertilizer Co., Atlanta, Ga.; Mutual Fertilizer Co., Savannah, Ga.; Naugatuck Chemical Co., Naugatuck, Conn.; New Jersey Zinc Co., Hazard, Pa.; New Orleans Acid Co., New Orleans, La.; Old Dominion Guano Co., Atlanta, Ga.; Painter Fert. Co., Jacksonville, Fla.; Parsons Pulp & Lumber Co., Parsons, W. Va.; Pelham Phosphate Co., Pelham, Ga.; Pennsylvania Salt Mfg. Co., Philadelphia and Natrona, Pa.; Phosphate Mining Co., Savannah, Ga.; Planters Chemical & Oil Co., Talladega, Ala.; Planters Fertilizer & Phosphate Co., Charleston, S. C.; E. Raugh & Sons, Indianapolis, Ind.; Read Phosphate Co., Nashville, Tenn., & Charleston, S. C.; Reliance Fertilizer Co., Savannah, Ga.; Richmond Guano Co., Richmond, Va.; Riverside Acid Works, Warren, Pa.; Roanoke Guano Co., Roanoke, Va.; Robertson Fert. Co., Norfolk, Va.; F. S. Royster Guano Co., Norfolk, Va., and Baltimore, Md., Columbia, S. C., and Macon, Ga.; Savannah Guano Co., Savannah, Ga.; Scott Fertilizer Co., Elkton, Md.; Smith Agricultural Chemical Co., Columbus, Ohio; Smith & Co., Springfield, Ill.; Southern Fertilizer & Chemical Co., Savannah, Ga.; Southern States Fert. Co., Savannah, Ga., and Augusta, Ga.; Standard Guano Co., Baltimore, Md.; Standard Chemical & Oil Co., Troy, Ala.; Standard Guano & Chemical Co.; New Orleans, La.; Swift & Co., with plants at New Orleans, La., Atlanta, Ga., and Wilmington, N. C.; Talladega Mercantile Co., Talladega, Ala.; Tennessee Fertilizer Co., Albany, Ga., and Columbus, Ga.; I. P. Thomas & Son Co., Philadelphia, Pa.; Troup Co., La Grange, Ga.; Tupella Fertilizer Factory, Tupela, Miss.; Union Superphosphate Co., San Francisco, Cal.; Virginia-Carolina Chemical Co., with plants at Alexandria, Va., Albany, Ga., Americus, Ga., Atlanta, Ga., Augusta, Ga., Baltimore, Md., Birmingham, Ala., Blacksburg, S. C., Charleston, S. C., Charlotte, N. C., Columbia, S. C., Columbus, Ga., Durham, N. C., Dothan, Ala., Gainsville, Fla., Greenville, S. C., Lynchburg, Va., Macon, Ga., Memphis, Tenn., Mobile, Ala., Montgomery, Ala., Newbern, N. C., Newnan, Ga., Norfolk, Va., Opelika, Ala., Petersburg, Va., Pon Pon, S. C., Richmond, Va., Rome, Ga., Salisbury, N. C., Savannah, Ga., Sanford, Fla., Social Circle, Ga., Staunton, Va., Shreveport, La., Wilmington, N. C., Winston-Salem, N. C.

NEW RECORD IN SHAFT SINKING MADE IN THE CUYUNA RANGE

Crosby, Minn., Aug. 20.—The Joan Mining company lays claim to the record time of the Cuyuna range for shaft sinking, having sunk its shaft No. 4 in twelve days to a depth of sixty feet. The work was under charge of Supt. H. J. Letchel, formerly with the Oliver Iron Mining company on the Mesaba range.

The properties of the Joan Mining company are owned and operated by M. L. Fay, of Duluth, and are considered among the best on the Cuyuna range, much of the ore being high grade manganiferous. Thirty thousand tons will be shipped this season and shipments will start as soon as the railroad is built to the mines. All the machinery is electrically equipped. Shipping from Joan No. 1 mine started last month.

Doing Constructive Work

A perusal of the weekly press bulletins by Fletcher Hamilton, the state mineralogist of California, will show that a large amount of constructive work is being conducted by the California State Mining Bureau. The press bulletin is carefully prepared, and is proof that Mr. Hamilton is not the type of scientist who allows the results of his work to remain buried, thereby greatly impairing his usefulness to the public.

COAL PRODUCTION OF U. S. CONTINUES TO DECLINE

The ratio of tonnage produced to full-time output continued to decline during the week ended August 11. Mines representing more than one-third of the output of the country produced 71.8 per cent of their combined full-time capacity as limited by the present labor force. The index not only fell below the level of the preceding week (73.0), but reached the lowest point attained since June 1 when the system of weekly reports was begun. Iowa, Illinois, Ohio, Kansas, and Missouri, declined; Alabama, Southwestern Virginia, and Western Pennsylvania held their own; while Eastern Kentucky and Tennessee recovered to some extent from the depression of the week before.—*From the Geological Survey's Weekly Coal Statement.*

ANTHRACITE PRODUCTION SHOWS DECREASE IN JULY

The shipments of anthracite for July, as reported to the Anthracite Bureau of Information, at Wilkes-Barre, amounted to 6,724,252 tons. On account of the Independence Day holiday which reduced the working time in the mines by about a day and a half; of one extra Sunday, which reduced the working time another day; of several "button strikes" which followed the observance of "Button Day" on the 26th of the month, and of a reduction in the number of men due to enlistment in the military forces, the shipments show a decrease of 324,785 tons as compared with the preceding month. In spite of this decrease the shipments in July of this year exhibit a gain over the corresponding month of 1916 of 1,291,374 tons, and exceeded the previous high July record made in 1912 by 439,099 tons. Button strikes which occurred at seven of the larger collieries and which involved a total of 5,542 men for an average of two and one-third days, were alone responsible for a loss of about 25,000 tons of production.

Number of Coal Operators

The number of individuals and companies which are operating coal mines in the United States are shown by United States Geological Survey records, which are kept within a few days of date. The number of such operators totals 19,279, distributed as follows:

Alabama, 149; Alaska, 13; Arkansas, 141; California, 5; Colorado, 212; Georgia, 2; Idaho, 4; Illinois, 1,346; Indiana, 849; Iowa, 412; Kansas, 388; Kentucky, 4,039; Maryland, 202; Michigan, 15; Missouri, 1,433; Montana, 190; Nevada, 2; New Mexico, 32; North Carolina, 3; North Dakota, 392; Ohio, 2,584; Oklahoma, 237; Oregon, 28; Pennsylvania (bituminous) 2,363, (anthracite) 172; South Dakota, 21; Tennessee, 181; Texas, 44; Utah, 58; Virginia, 118; Washington, 55; West Virginia, 3,486; Wyoming, 103.

SHIPMENTS OF COAL SHOW A DECREASE OF FOUR PER CENT

The record of cars of coal loaded on roads representing more than half the shipments of bituminous coal shows a drop of 4 per cent in the week ended August 18 compared with the week ended August 11, but an increase over the low record of August 4. The general downward tendency in the rate of production that has been manifested since the middle of July was resumed, after a slight gain in the week ended August 11, in all districts shown except Illinois and Indiana. The slump in Pennsylvania and Ohio is particularly to be noted. A strike in the Southern Appalachians decreased shipments from eastern Kentucky and eastern Tennessee nearly 20 per cent.—*From the Geological Survey's Weekly Coal Report.*

PERSONALS

Dr. Henry Mace Payne has closed his office in New York to become assistant to the president of the Bertha Coal Company and affiliated companies, with offices at 1203 Chamber of Commerce Building, Pittsburgh, Pa.

Falcon Joslin, of Seattle, Wash., and Alaska, who has been spending several months in New York and Washington, left late in August for an extended trip in Alaska.

William Wearne, superintendent of the Inland Steel Company, at Crosby, Minn., has received a commission as captain in the Engineer Reserve Corps. Mr. Wearne recently became a member of the American Mining Congress.

W. A. Williams, formerly chief petroleum technologist of the Bureau of Mines, made an extended visit to Washington recently.

C. E. Julihn has returned to Washington after making examinations of the pyrrohotite deposits in Maine. He also visited the nickel mines at Sudbury, Ontario. His next assignment covers an inspection of the nickel-cobalt properties at La Motte and Fredericktown, Mo.

James H. Pershing, George L. Nye, John H. Fry and M. P. Tallmadge announce that they have formed a partnership for the general practice of law, under the firm name of Pershing, Nye, Fry & Tallmadge, Suite 519, Equitable Building, Denver, Colo. Mr. Nye is an active member of the American Mining Congress.

E. W. Parker, of the Anthracite Bureau of Information, Wilkes-Barre, Pa., when in Washington recently was a caller at the offices of the American Mining Congress.



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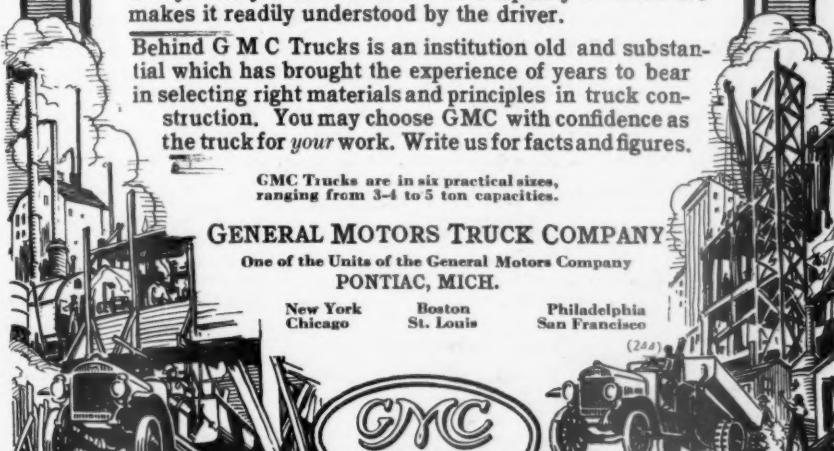
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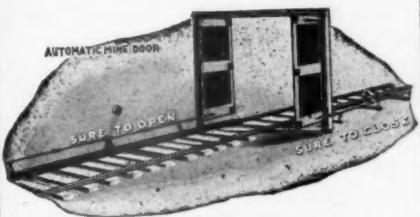
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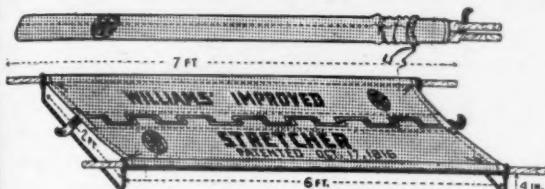
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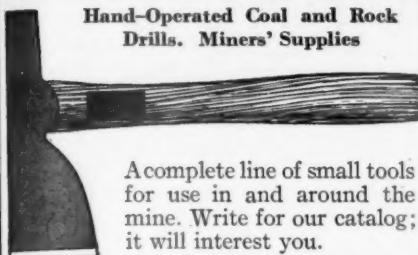
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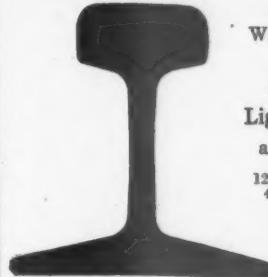
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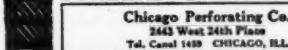
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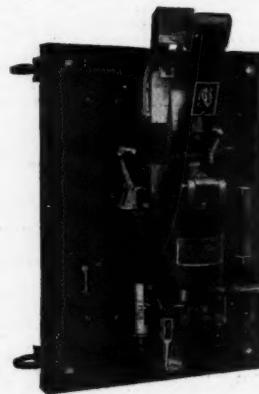
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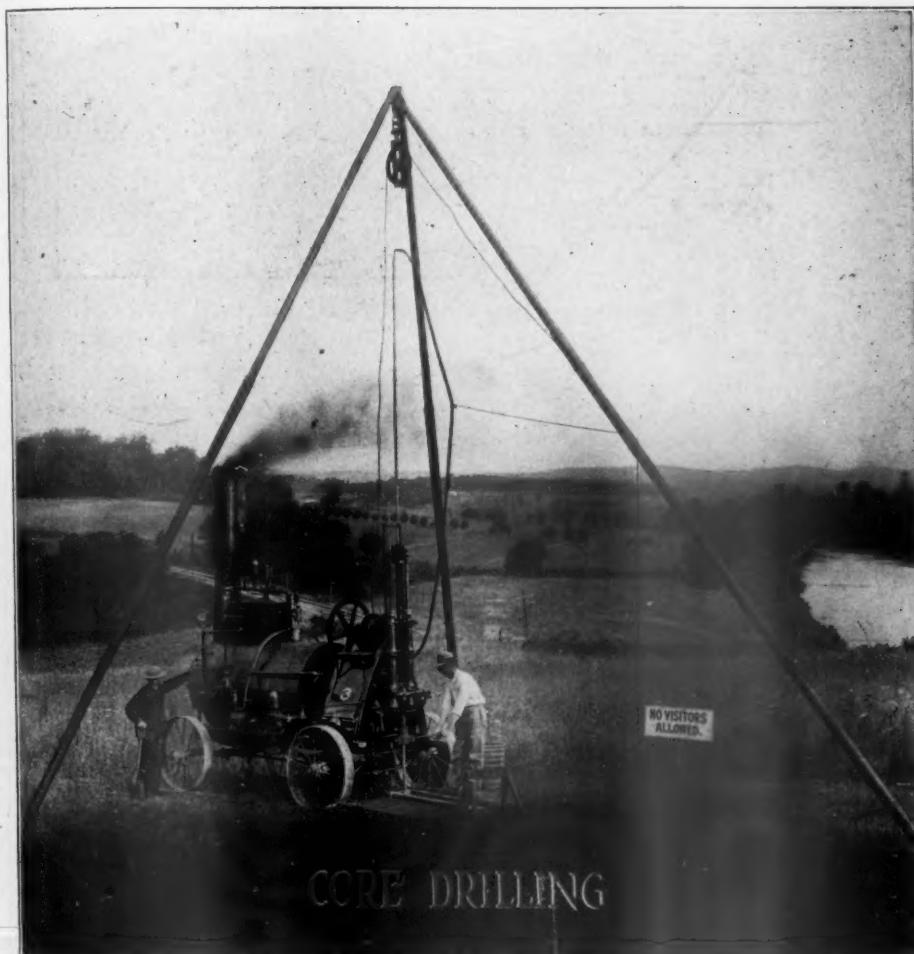
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Seattle Office: L. C. Smith Building

